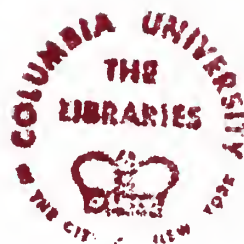



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BIOTERRORISM:
HOW REAL IS THE DANGER?

JULY 1998

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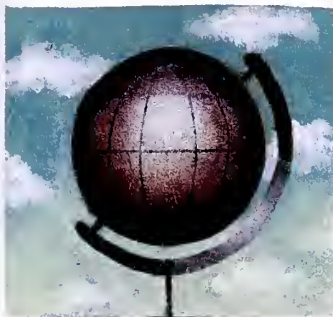
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A Novel Approach to Bioterrorism

After I read the two bestsellers reviewed in this issue (page 53), I started thinking about Michael Crichton. In his spare time at Harvard Medical School, he wrote



"The Andromeda Strain," made millions on the book and the movie, left medicine for writing and then screenwriting, and now has made gazillions and breezed through four marriages. Although I have no desire for a succession of wives, I wouldn't mind padding my retirement fund. So when I read the rules for writing a successful thriller, devised by John Baldwin, author of the bioterrorist novel "The Eleventh Plague," I figured I had my start on fame and fortune. I think the market can take at least one more bioterrorist novel, and I plan to base it on the characters in this issue of *Minnesota Medicine*.

Baldwin's first rule: *The hero is an expert*. Clearly, my hero will be a bearded marathon swimmer who tirelessly leads an epidemiology unit in the fight against hamburger and ice cream teeming with bugs. Rule 2, *the villain is an expert*, is also easily met. I have in mind an infectious disease physician with an unpronounceable, Eastern-European name who ironically becomes deranged as the result of a rare form of encephalitis. His terrorist germ of choice will be a genetically engineered version of hepatitis C, which is currently dubbed the "silent epidemic," but in my thriller will noisily blow through the population like our recent derecho, transmitted in Taco John's salsa.

Following rule 3, *you must watch all of the villainy over the shoulder of the villain*, we will see Dr. Terrorwicz alter the viral genome in his garage lab, infect barrels of salsa, and calmly watch the ensuing havoc on the 6 o'clock news. The first wave of cases *mobilizes a team of experts in various*

fields (rule 4) led by our hirsute hero and aided by a hepatitis expert from the Mayo Clinic and a legal squad temporarily diverting their attention from Stark II regulations. The team scours every Taco John's in the Twin Cities for clues, initially taking a wrong turn at the tortilla batter. To maintain suspense and to avoid irate letters, I'll omit the identity of characters fulfilling rules 5 and 6—*two or more of the team must fall in love* (rule 5) and *die* (6).

As the victims accumulate, a university hospital run by an M.D.-turned administrator opens a special ward to handle the load. Meanwhile, as the encephalitis virus liquefies more of our terrorist's brain, his *paranoia focuses on the hero* (rule 7), and he concocts ways to get the hero to eat tainted salsa. But the hero's Scandinavian heritage forbids this, so the villain resorts to direct confrontation, culminating in a final scene at the Megamall in which the villain falls from the Mighty Axe and is presumed dead. However, his body is never found. (Rule 8: *The villain and the hero must live to do battle again in the sequel*.)

To meet rule 9, *all deaths must proceed from the individual to the group*, I'll include plenty of graphic descriptions of innocent victims struck by devastating illness in Byerly's and at Little League games. As the victims' hepatitis fulminates, gushing GI bleeds will be treated by a team of endoscopists led by a female gastroenterologist.

I think I've managed to get most everybody in except for some of the advertisers. I know it needs polishing, and I need to refine my plot flow and character development. And if it starts to drag, I'll resort to rule 10—*just kill somebody*.

—Charles R. Meyer, M.D., Editor-in-Chief

.....
"The market can take at least one more bioterrorist novel; I plan to base it on the characters in this issue of Minnesota Medicine."

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The first year is over, university hospital workers have made the transition to Fairview employment, the shuttle bus carries staff efficiently back and forth across the river, and last year's new merger partners—University of Minnesota Hospital on the Mississippi's East Bank and Fairview Riverside Medical Center on the West Bank—have formed a workable union as Fairview-University Medical Center.

A River Runs Through It

By Jean Murray

In place to guide this giant entity through its maturing phase is a man with firm footing on both sides of the river: Gordon (Gordy) Alexander Jr., M.D., the first physician CEO at a Fairview Health System hospital. Alexander, 47, gained his initial business experience while working on a business administration degree at the University of Minnesota. He solidified his ties with the university as a medical student at the University of Minnesota Medical School and gained hands-on knowledge of the University of Minnesota Hospital while completing his residency in obstetrics and gynecology.

He became attuned to the needs of community physicians during 14 years of clinical practice with Southdale Obstetrics and Gynecology, P.A., as well as in his leadership role as chair of the board of Fairview Physician Associates. And he learned about the intricacies

of running a major medical center as senior vice president and chief medical officer of Fairview Hospital and Healthcare Services for the past five years.

Alexander, who took over as Fairview-University CEO in April, clearly enjoys what he's doing. If you want to talk about the difficulties of merging, he is *not* the person to talk to. He's truly an optimist.

"I'm loving it," he says. "It's exciting, sometimes bordering on the overwhelming, but I haven't been overwhelmed yet. I enjoy change. It brings an opportunity to do something better."

New chief operating officer Pam Tibbetts—an 18-year veteran of the Fairview system and partner with Alexander in guiding Fairview-University Medical Center—says, "It's fun working with Gordy. He's positive and always sees the possibilities. He has a great sense of humor and a 'can-do' attitude."

And while it's not been all smooth sailing, Alexander gives those who interact with him assurance that the redesigned organization is strong and growing.

The Partnership

The partnership of University of Minnesota Hospital and Fairview Riverside Medical Center became official January 1, 1997. Frank Cerra, M.D., senior vice presi-



Fairview-University Medical Center CEO Gordon Alexander Jr., M.D.

dent for health sciences at the university's Academic Health Center, said at the time, "The new Fairview-University Medical Center creates a relationship designed to preserve the education and research mission of the university. Fairview has shown a unique willingness to become a partner in the university's education and research programs."

The Fairview system has annual revenues of about \$1.1 billion, with \$350 million coming from Fairview-University Medical Center. The 1,850-bed hospital has a staff of nearly 7,000. Approximately 450 university physicians practice and teach at the hospital, and one-third of the university's 900 residents train at the facility.

Asked how it's going a year-and-a-half into the partnership, Cerra responds, "The relationship is positive and getting better. It takes awhile to learn how to work together to move this relationship forward and to continue meeting our other public obligations. We are learning."

Cerra voices confidence in Alexander's abilities to bridge the two hospitals' cultural and medical differences and move Fairview-University ahead. "He brings excellent leadership skills and he's known to the faculty," says Cerra. "He also has a reputation of fairness and has the ability to listen. He is willing to make decisions and move on."

A Complex Process

What does moving on involve? "We took two strong organizations and are making one stronger organization," says Alexander. "We're building on the strengths of both. But, of course, it's a complex process. We knew on January 1, 1997, that a several-year process would be needed to accomplish this merger, and we're on track."

Alexander explains that a primary goal for the first year was consolidation of two campuses divided by the Mississippi River and elimination of duplicate services. The process continues as the majority of high-acuity, high-technology care is concentrated on the university side of the river, and such units as the new ambulatory recovery center

and short-stay and outpatient treatment centers find a home on the Riverside campus.

Alexander points out that most changes in personnel have been targeted at moving people from one place to another within the Fairview system. "Reductions have generally been accomplished by normal attrition and turnover." Some physician groups have changed their

locations, but usually for reasons related to contracts with health plans or their employer—reasons unrelated to the merger. The new CEO understands the long traditions in place at both hospitals and the need to continue working to integrate the employee and medical staff cultures. He knows it will take time before everyone involved considers Fairview-University Medical Center one entity.

"It's challenging for the employees, and our goal is to be sure they fully understand what we're doing and why we're doing it and to include their input whenever we can," he says. "The biggest joy in this partnership is the fact that there are 6,500 employees who are very talented. If I look around and ask who I would want with me to tackle this job, it would be the phenomenal employees we have here, the highly valued faculty, and the physician partners from the community."

Part of Alexander's daily task involves bringing the vision home to both former university and Riverside employees and to the physician partners. He describes the process as "clarifying the mission, getting feedback, assuring that the strategic direction we're heading is well understood, and then dealing with the operating people to assure that we take that direction and operate so we have a strong customer focus and good provider relationships."

He recognizes the difficulties brought about by a changing and not always friendly health care environ-

ment. "We're doing this in the midst of a health care economy that's been challenging," says Alexander. "Even in the best of times, bringing two hospitals together wouldn't be easy, but certainly the additional stresses of the health care marketplace right now are dramatic."

Alexander brings to the task the perspective of both administrator and physician, and that's helping him communicate with all the medical center's constituencies. "I have a solid understanding of the clinical world," he says, "and I also understand what we were trying to accomplish when we decided to merge the hospitals. Some of the community physicians are still trying to understand what it all means to them, but we are working with them and articulating our message, and I believe we're getting some cautious support for what we're trying to do."

Like any relationship, this one will need continued nurturing. "We've confirmed our belief that [the merger] would be hard work," says Alexander, "but I believe the potential will be realized."

Alexander is happy to witness the payoff, having been involved with the University of Minnesota and Fairview Health System for much of his life. "In many ways," he says, "I feel like I'm home." MM

Jean Murray is director of communications for the Minnesota Medical Foundation at the University of Minnesota.

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THE POISON TABOO

Modern society has labeled biological weapons "repugnant to the conscience of mankind," much as ancient societies objected to the use of poison weapons in warfare.

LEONARD A. COLE, PH.D., D.D.S.

The infrequent use of biological weapons to date might be explained in many ways. Some potential users have probably lacked familiarity with how to develop pathogens as weapons; moreover, they may have been afraid of infecting themselves. Nations and terrorists alike might furthermore be disinclined to use bioagents because they are by nature unpredictable. Through mutations, a bacterium or virus can gain or lose virulence over time, which may be contrary to the strategic desires of the people who released it. And once introduced into the environment, a pathogen may pose a threat to anybody who goes there, making it difficult to occupy territory.

But beneath all these pragmatic concerns lies another dimension that deserves more emphasis than it generally receives: the moral repugnance of these weapons. Their ability to cause great suffering, coupled with their indiscriminate character, no doubt contributes to the deep-seated aversion most people have for them. And that aversion seems central to explaining why bioweapons have so rarely been used in the past. Contrary to analyses that commonly ignore or belittle the phenomenon, this natural antipathy should be appreciated and exploited. Even some terrorists could be reluctant to use a weapon so fearsome that it would permanently

alienate the public from their cause.

In recognition of these sentiments, the 1972 Biological Weapons Convention describes germ weaponry as "repugnant to the conscience of mankind." Such descriptions have roots that reach back thousands of years. (Not until the 19th century were microorganisms understood to be the cause of infection; before then, poison and disease were commonly seen as the same. Indeed, the Latin word for "poison" is "virus.")

Among prohibitions in many civilizations were the poisoning of food and wells and the use of poison weapons. The Greeks and Romans condemned the use of poison in war as a violation of *ius gentium*—the law of nations. Poisons and other weapons considered inhumane were forbidden by the Manu Law of India around 500 B.C. and among the Saracens 1,000 years later. The prohibitions were reiterated by Dutch statesman Hugo Grotius in his 1625 opus "The Law of War and Peace," and they were, for the most part, maintained during the harsh European religious conflicts of the time.

Like the taboos against incest, cannibalism, and other widely reviled acts, the taboo against poison weapons was sometimes violated. But the frequency of such violations may have been minimized because of their castigation as a "defalcation of proper principles," in the words of the 18th- and 19th-century English jurist Robert P. Ward. Under the law of nations, Ward wrote, "Nothing is more expressly forbidden than the use of *poisoned arms*" (emphasis in original).

Historian John Ellis van Courtland Moon, now professor emeritus at Fitchburg State College in Massachusetts, contends that growing nationalism in the 18th century weakened the disinclinations about poison weapons. As a result of what Moon calls "the nationalization of ethics," military necessity began to displace moral considerations in state policies; nations were more likely to employ any means possible to attain their aims in warfare.

In the mid-19th century, a few military leaders proposed that toxic weapons be employed, although none actually were. Nevertheless, gas was used in World War I. The experience of large-scale chemical warfare was so horrifying that it led to the 1925 Geneva Protocol, which forbids the use of chemical and bacteriological agents in war. Images of victims gasping, frothing, and choking to death had a profound impact. The text of the protocol reflects the global sense of abhorrence. It affirmed that these

weapons had been "justly condemned by the general opinion of the civilized world."

Chemical and biological weapons were used in almost none of the hundreds of wars and skirmishes in subsequent decades—until Iraq's extensive chemical attacks during the Iran-Iraq war. Regrettably, the international response to Iraqi behavior was muted or ineffective. From 1983 until the war ended in 1988, Iraq was permitted to get away with chemical murder. Fear of an Iranian victory stifled serious outcries against a form of weaponry that had been universally condemned.

The consequences of silence about Iraq's behavior, though unfortunate, were not surprising. Iraqi ability to use chemical weapons with impunity, and their apparent effectiveness against Iran, prompted more countries to arm themselves with chemical and biological weapons. Ironically, in 1991 many of the countries that had been silent about the Iraqi chemical attacks had to face a chemically and biologically equipped Iraq on the battlefield.

To its credit, since the Persian Gulf War, much of the international community has pressed Iraq about its unconventional weapons programs by maintaining sanctions through the U.N. Security Council. Council resolutions require elimination of Iraq's biological weapons (and other weapons of mass destruction), as well as information about past programs to develop them. Iraq has been only partially forthcoming, and U.N. inspectors continue to seek full disclosure.

But even now, U.N. reports are commonly dry recitations. Expressions of outrage are rare. Any country or group that develops these weapons deserves forceful condemnation. We need continuing reminders that civilized people do not traffic in, or use, such weaponry. The agreement by the United States and Russia to destroy their chemical stockpiles within a decade should help.

Words of outrage alone, obviously, are not enough. Intelligence is important, as are controls over domestic and international shipments of pathogens and enhanced global surveillance of disease outbreaks. Moreover, institutions that reinforce positive behavior and values are essential.

The highest priority of the moment in this regard is implementation of the Chemical Weapons Convention, which outlaws the possession of chemical

POISON TABOO continued on page 57

BIOTERRORISM: THE DANGER HITS HOME



Health officials

warn that

physicians and

other medical

workers must

prepare for bio-

logical warfare.

As D.A. Henderson, M.D., M.P.H., Distinguished Service Professor at Johns Hopkins School of Hygiene and Public Health, stood at the podium and began to speak about bioterrorism to a standing-room-only crowd of Minnesota health care professionals, all I could think about were the muffins.

Bountiful platters of muffins and melon had beckoned to my 450 fellow conferees just before we entered the large ballroom of a Bloomington hotel, and many of us carried a plateful of food as we sat down to listen to Henderson's lecture at the May 8 University of Minnesota-sponsored CME course on "Emerging Infections." I wasn't hungry, but I couldn't get my mind off those muffins. Then I noticed the guy behind me who kept coughing, and I pondered the ventilation system in the ceiling above.

A chilling thought held me: If a disgruntled doctor, an out-of-work nurse, a hotel employee with a hidden agenda—or if I, for that matter—wanted to cripple Minnesota's health care system, all any of us needed to do was lace the morning muffins with a little *Salmonella*. More effective yet: find a way to insert an aerosol dispersion unit with variola virus into the hotel's HVAC system. Within days, the people in this room would be infecting their co-workers, spouses, children, and neighbors. Within a week, a deadly epidemic could be sweeping the state.

And here I sat, at ground zero.

More critically, here were some of our region's top health officials, the men and women most capable of coping with an act of biological terrorism, assuming they were not its first victims: Michael Osterholm, Ph.D., M.P.H., state epidemiologist; Philip Peterson, M.D., director of infectious diseases at Hennepin County Medical Center; Kristine Moore, M.D., M.P.H., assistant state epidemiologist; and Dennis Maki, M.D., head of infectious diseases at the University of Wisconsin-Madison Medical School, not to mention the hundreds of EMS techs, public health nurses, emergency physicians, epidemiologists, and others who had come to munch on muffins and learn about infections.

And here, of course, stood Donald A. Henderson, the man who led the World Health Organization's triumphant struggle to contain smallpox, now warning us in a slow, deep voice: "Recipes for making biological weapons are now available on the Internet. And even groups

of modest finances and basic training in biology and engineering could develop—should they wish—an effective weapon at a very low cost.”

As Michael Osterholm had said to me a day earlier: “I firmly believe it’s not a question of *if* there will be a biological terrorism event—it’s a matter of when and where and how.”

PASTRY PARANOIA?

It’s difficult not to feel apprehensive about bioterrorism these days. The muffin scenario may sound overblown, but just last year, in an issue devoted to biological weapons, the *Journal of the American Medical Association* described a 1996 outbreak of severe diarrhea among laboratory workers at a large Texas medical center. The workers had eaten pastries that had been intentionally contaminated with a rare bacteria taken from the lab’s own stock culture of *Shigella dysenteriae* type 2. The unknown assailant had invited co-workers to enjoy the treats through an anonymous in-house e-mail.¹

Another JAMA article described a 1984 incident in which a religious cult spread *Salmonella* in 10 restaurant salad bars in a small Oregon town in order to influence a local election, causing 751 cases of gastroenteritis.²

Other events have added fuel to the fear. In early 1997, the headquarters of B’nai B’rith in Washington, D.C., received a package containing a broken, leaking petri dish labeled “anthrax.” It turned out to be a hoax, but emergency workers sealed off several city blocks and quarantined 100 employees for nine hours.³ In February this year, the FBI arrested two men in Las Vegas and charged them with possession of “weapons-grade” anthrax.⁴

Two recent novels, “The Eleventh Plague” and “The Cobra Event” (see Book Reviews, page 53), provide fictional accounts of biological terrorism—the latter book is said to have inspired President Clinton to call for increased attention to potential bioterrorism. And according to an April 26 *New York Times* article, federal officials have been meeting secretly to play out bioterrorist sce-

narios and have discovered “huge gaps in logistics, legal authority and medical care.”⁵ The front-page headline: “U.S. Fails Exercise Simulating Strike by a Germ Weapon.”

BIOWEAPONS: A LONG HISTORY

Biological warfare is not just today’s headline; it is a centuries-old stratagem—though widely condemned, nonetheless used. Hannibal won a naval battle in 190 B.C. by firing earthen vessels full of venomous snakes into his enemy’s flagship. In A.D. 1155, Barbarossa used soldiers’ corpses to poison wells at the battle of Tortona. The Mongols laid siege to the Genoan outpost of Caffa in 1344, hurling dead bodies infected with bubonic plague over the city walls. Russians used the same technique in 1710 against Swedes in Estonia. During the French and Indian war, a British commander suggested that smallpox-infected blankets be given to “disaffected tribes of Indians.”⁶

During World War I, Germans developed strains of anthrax and glanders to infect sheep, cattle, reindeer,



ILLUSTRATIONS BY ELIZABETH LADA

mules, and horses intended for use by Allied forces.⁷ From 1932 until the end of World War II, the Japanese conducted deadly human experiments involving anthrax, cholera, *Shigella*, *Salmonella*, and plague in occupied Manchuria.^{7,8} (After the war, lead Japanese scientists were granted immunity from war crimes prosecution in return for disclosing the results of their research to their American captors.) British experiments were far more limited, but included the release of anthrax spores on Gruinard Island off Scotland in 1941; spores remained viable until the island was decontaminated in 1986.^{7,8}

In the United States, biological weapons efforts did not intensify until the Korean War. The U.S. Army built a major production facility in Pine Bluff, Arkansas, in the early 1950s, and scientists carried out animal and human studies at Fort Detrick in Maryland. Between 1949 and 1968, the government researched aerosolization and dispersion techniques through the covert release of simulants in major U.S. cities, including Minneapolis, New York, and San Francisco.^{6,8}

By the late 1960s, the United States had stockpiled anthrax, botulinum toxin, *Francisella tularensis*, *Brucella suis*, *Coxiella burnetii*, staphylococcal enterotoxin B, and Venezuelan equine encephalitis virus for use in weapons, as well as several fungal plant pathogens intended to cause crop failure and famine.⁸

But in 1969 and 1970, President Nixon terminated the U.S. offensive biological weapons program through two executive orders, which included the destruction of existing bioweapon stockpiles. Soon thereafter, the United States Army Medical Research Institute of Infectious Diseases (USAMRIID) was created to develop medical defenses against biological weapons.⁸

THE RACE TO BUILD BIOWEAPONS

In March 1975, following a British initiative, the Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological and Toxin Weapons and on their Destruction, better known as the Biological Weapons Convention (BWC), went into effect.⁸ Although signed by 158 nations and ratified by 140, the BWC lacks verification and enforcement measures and has not prevented extensive development of biological weapons by Iraq and the former Soviet Union, both BWC signatories, as well as other countries.⁹

During the 1970s and the 1980s, the Soviet "Biopreparat" employed 55,000 scientists and technicians to develop offensive biological weapons. Boris Yeltsin pledged in 1992 to end the program, but a 1995 report estimated that as many as 30,000 Russians were still working for Biopreparat.⁸ In November 1997, a U.S. National Academy of Sciences committee urged the Department of Defense to spend \$38.5 million on joint U.S./Russian bioweapons research projects to prevent underemployed Russian experts from helping Libya, Iraq, or other countries develop biological weapons.¹⁰

Iraq's development of biological weapons worried the world during the 1991 Gulf War and again during the 1998 standoff, when the U.S. Department of Defense began immunizing 1.5 million soldiers against anthrax.¹¹ Officials of the

United Nations Special Commission discovered that Iraq had developed anthrax, botulinum toxin, and aflatoxin, and during Operation Desert Storm had deployed about 200 bombs and 25 ballistic missiles with biological weapons.¹²

In 1995, the Office of Technology Assessment identified at least 17 countries with biological weapons: Iran,

"WE ARE ILL-PREPARED TO DEAL
WITH A TERRORIST ATTACK WHICH
EMPLOYS BIOLOGICAL WEAPONS."

—D.A. Henderson, M.D., M.P.H.



Iraq, Libya, Syria, North Korea, Taiwan, Israel, Egypt, Vietnam, Laos, Cuba, Bulgaria, India, South Korea, South Africa, China, and Russia.¹³ Negotiations are underway to enact a verification system that would give teeth to the BWC, but substantial political and financial obstacles remain.¹⁴

THE THREAT AT HOME

As difficult as it may be to ensure compliance with international treaties, it could prove far more problematic to control the spread and use of biological weapons by terrorist groups and individuals. Several events in early 1995 focused the world's attention on the lethal capabilities of home-grown terrorists.

The March 1995 sarin nerve gas attack in the Tokyo subway system by the Aum Shinrikyo cult killed 12 people and injured over 5,000. The cult had also experimented with a variety of biological pathogens, including botulinum toxin, anthrax, Q fever, and ebola.¹⁵ Cult members testified recently that they carried out at least nine biological attacks on targets including the Japanese Legislature, the Imperial Palace, and a U.S. naval base. These strikes failed because Aum Shinrikyo did not obtain germs of sufficient virulence.¹⁶

In April 1995, the Oklahoma City bombing brought the message home to Americans: with nothing more sophisticated than fertilizer and a rented van, American terrorists could wreak havoc. And in May that year, using a credit card and false letterhead, right-wing radical Larry Harris ordered plague bacteria from a Maryland biomedical supply firm, which promptly sent him three vials of *Yersinia pestis*.¹³ Harris was arrested and convicted of mail fraud in November 1995, but less than three years later, he was one of the two men arrested in Las Vegas for possession of anthrax.¹⁷

Even closer to home, in March and October 1995, four members of the Patriot's Council, a small paramilitary group in Alexandria, Minnesota, were convicted of producing and possessing 0.7 grams of ricin, a deadly toxin derived from castor beans. The four men, the first people convicted under the Biological Weapons Anti-Terrorism Act of 1989, were said to be planning to assassinate IRS agents and local deputy sheriffs.¹⁸

PREPARING FOR CALAMITY

According to D.A. Henderson, the two pathogens most likely to be deployed by bioterrorists are smallpox and anthrax. The likelihood of their use is small, and there are obstacles to obtaining, weaponizing, and unleashing them. But bioterrorism is what Osterholm defines as a "very low-probability, very high-consequence event." By all measures, the cost of such an event would be enormous.

A recent Centers for Disease Control and Prevention

analysis estimated the economic impact of a bioterrorist attack as ranging from \$478 million per 100,000 persons exposed to *Brucella melitensis* up to \$26 billion per 100,000 persons exposed to anthrax.¹⁹ "These are minimum estimates," the authors wrote. "In our analyses, we consistently used low estimates for all factors directly affecting costs. ... Delay in starting a prophylaxis program is the single most important factor for increased losses."

A World Health Organization report estimated that releasing 50 kilograms of *Francisella tularensis* upwind of a 500,000-person city would kill 30,000 people and incapacitate another 125,000. An equal release of anthrax spores would kill 95,000.²⁰

"Currently, U.S. stocks of smallpox vaccine would perhaps vaccinate as many as 7 to 8 million," Henderson told participants at the May conference. "And there's nobody manufacturing the vaccine, there's no vaccine production capacity anywhere in the world today. And what of anthrax?" he continued. "Essentially, therapy after the onset of illness probably would be of no value for two full months ... and a vaccine given at zero and for about 15 days [would be needed]. The only problem is that there is at present no vaccine available for civilian use and no plan to produce any. ... And at this point, we have not established a stockpile of antibiotics."

"I think we can say that today we are ill-prepared to deal with a terrorist attack which employs biological weapons," Henderson stated.

At the local level, the point man for such disasters has reached a similar conclusion. "I'm not one of these people who likes to overreact to anything," says Tim Turnbull, director of Hennepin County Emergency Preparedness, "but I think we have to start taking this challenge a little bit more seriously." Turnbull explains that people in his business tend to focus on natural disasters or chemical accidents. "In the public safety community, we're used to dealing with things where we think we're going to be able to contain and minimize the problem. If there's some type of biological exposure, it could be a much longer-term event, much more difficult to deal with."

He assesses the painful reality of triage: "In a way, it's like the old nuclear-attack type of scenario. It's not a matter of you can save everybody. It's how do you minimize the impact?"

ISSUES IN MINNESOTA

In Minnesota, a small group of state and local officials, including Osterholm and Turnbull, has begun to identify issues that will have to be dealt with locally.

"We're starting informally and unofficially," says Pat Bloomgren, director of the Environmental Health Division at the Minnesota Department of Health and a

member of the working group. "[But] it will not take very long for this to exceed our capacity."

Formal preparations will begin in early 1999, when a federal interagency team organized by the Defense Department arrives in Minneapolis to "train the trainers." They will give emergency personnel information and plans for conducting local training programs about nuclear, biological, and chemical terrorism. Similar but shorter training sessions were held in the Twin Cities in mid-May, led by instructors from Fort McCoy, Wisconsin.

None of these efforts provides the larger solutions that local planners are hoping for, however. Broad jurisdictional questions have not been addressed. Officials must clarify questions of authority among local, state, and federal officials and between civilian agencies and military branches. And dramatic legal quandaries could arise in a biological terrorism scenario. "It brings up a whole host of issues, like 'who's in charge?'" notes Bloomgren. "Who has the authority to keep people in buildings so they can't go out and expose others? Does the authority to shoot someone exist?"

Numerous medical issues have not been resolved, either—such as vaccination of health care workers and other officials, or how to deal with exposed patients. "We've got a national medical defense system in place that is probably going to have to really be reexamined in terms of how valuable it is and how it could be used," says Turnbull. "If there is an exposure in a geographical area, we don't want to spread that exposure by using this system which automatically takes people to other parts of the country for treatment unless this can be done in a very safe and secure manner. So there's a lot of issues out there. And we're just at the beginning of starting to look at them."

Turnbull and others note that many of these issues cannot be solved at the local level. "We're looking for leadership from the federal agencies," Turnbull says. To date, say local authorities, federal leadership is lacking and communication is poor.

"There's been a major disconnect between Washington and the state and local areas when it comes to bioterrorism," says Osterholm. "We have major issues on vaccine stocks. We have major issues on antimicrobial agents and availability. We have major issues related to medical service support. None of this has been addressed at the federal level."

Osterholm had a chance to voice his concerns to members of Congress last month. Testifying at a June 2

Senate hearing, Osterholm called for \$375 million for antibiotics and vaccines, disease surveillance, and improved federal laboratories and computer equipment. In May, President Clinton ordered the stockpiling of vaccines and antibiotics for civilian casualties from biological weapons, but many of the details have yet to be worked out. Osterholm told the Senate committee that this effort would help fight a chemical attack but would be ineffective against biological weapons.

OVERWHELMED HOSPITALS

Even if federal leadership is forthcoming, the problems of detecting, identifying, containing, and treating a bioweapons outbreak are monumental. "The biological type of problem tends to leapfrog over a lot of the response and preparation that we've focused on in the past," notes Turnbull. "Because of the incubation period, it would be a number of days before we would even know

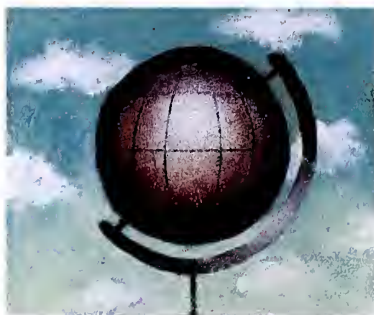
that we had a problem. ... It could cause a tremendous impact on our health delivery and our public safety delivery systems."

"This is going to be a situation where suddenly our emergency rooms, our urgent cares are going to be overwhelmed," says Osterholm. "And no one is necessarily going to know initially what it is that these people have."

Indeed, few American physicians have ever seen smallpox or would recognize it in its earliest stages. "If you look in the edition of Harrison's textbook of internal medicine that I grew up with going through medical school," says Kory Kaye, M.D., co-medical director of Regions Hospital Emergency Medical Services, "[smallpox] is listed as a historical disease only ... and I believe in the next edition, it doesn't even exist."

Recognized or not, if smallpox shows up in an emergency department, it will be spreading. One of the more contentious bioterrorism issues is whether health care workers should be vaccinated against smallpox, anthrax, or other pathogens. "This is a judgment call," says Henderson. "We're going to have to know the risk of the event itself and the risk of vaccines. Smallpox vaccine is not without risk."

Whether or not health care workers should be vaccinated remains a contentious issue, but regardless of how it is resolved, physicians should stay alert to the possibility of patient exposure to biological weapons. "[Physicians] need to contact the Minnesota Department of Health if they're seeing an unusual clustering of diseases."



es," says Kaye. "Also, [physicians should do] a quick general review of some of these diseases that we had previously felt were extinct."

But being ready for the worst will take more than a refresher course. "Unless there is some sort of comprehensive approach taken by the medical community, particularly the people who operate the emergency rooms, [we'll be unprepared]," says Turnbull. "Physicians ... are going to have to do some planning, more than they have done in the past," he warns. "Because this is a different kind of an animal that they're going to be going up against."

MM

Douglas Clement is a free-lance writer in Minneapolis.

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Anthrax: A Disease from Antiquity Visits the Modern World

Anthrax, a zoonotic disease almost eradicated in the industrial world, has become symbolic of biological warfare and terrorism.

Daniel Zydowicz, M.D.

There was a time, not so long ago, when the scientific and medical establishment optimistically and naively anticipated the eradication or control of a variety of infectious diseases that have plagued mankind for centuries. Industrialized nations underwent dramatic changes in hygiene, nutrition, and general living standards, contributing to longevity and an awareness of public health. Advances in diagnostic methods, vaccine development, and antibiotic formulations fueled the engine of medical progress. But the wheel of discovery keeps turning and, as this century of tremendous medical advancement ends, the realization dawns that we do not necessarily have biologic supremacy in our domain. New and old pathogens have visited and revisited despite (and because of) our best efforts to prevent them from doing so. The term "emerging" has been applied to these newly recognized, resurgent, resistant, or modified infections.

One example of an emerging infection is anthrax, a bacterial scourge of bygone times that is making headlines as a potential threat today. Several fundamental scientific concepts basic to the understanding of bacteriology, immunology, and the pathogenesis of infectious diseases evolved during the past 150 years as medical pioneers studied anthrax and the organism that causes it. More recently, however, knowledge gained by scientific inquiry and progress has been exploited for other purposes; anthrax has become the symbolic and literal prototype of an agent for biological warfare and terrorism.

Anthrax is a zoonotic disease with potential human victimization resulting from contact with infected animals and contaminated soil. The earliest identification may be 3,500 years ago as the "fifth plague of Egypt." Description of the illness is also found in the works of Virgil (25 B.C.) and during the Middle Ages, when it was called "Black Bane." Anthrax was the first bacterial infection specifically identified as such by Robert Koch in the 1870s; he also showed that its ability to sporulate was a mechanism for long-term survival in the environment. Inhalational anthrax or wool-sorter's disease was recognized by John Bell around the same time. William

Greenfield and Louis Pasteur pioneered vaccination procedures in the 1880s.

Because of extensive industrial disinfection measures and widespread animal vaccination programs, few endemic areas of anthrax remain. Geographic distribution is limited to parts of Asia and Africa, such as Turkey, Iran, Pakistan, and Sudan. Sheep, goats, cattle, and occasionally herbivore and swine products from these parts of the world are sometimes contaminated. There is an "anthrax belt" in the United States that includes areas in Louisiana, Oklahoma, and Colorado.

DISEASE IDENTIFICATION AND BIOCHEMISTRY

Microbiologic identification of *Bacillus anthracis* depends on standard laboratory techniques and biochemical tests. The organism is a large (1.0-1.5 μm x 3-10 μm) gram-positive rod with squared or concave ends. It grows well on sheep blood agar with formation of 4 mm to 5 mm grayish-white colonies that may display comet-tail protrusions; these morphologic characteristics, along with absence of features usually seen in other *Bacillus* species, help in identification. Isolates should be routed to the Minnesota Department of Health and then to the Centers for Disease Control and Prevention for confirmatory testing.

Anthrax toxin is what accounts for the virulence of the disease and is actually a conglomerate of plasmid-mediated exotoxins (lethal toxin and edema toxin) as well as an antiphagocytic poly-D glutamic acid capsule. Many details concerning the biochemistry and immunology of anthrax toxins have been elucidated since their importance was recognized in the 1950s. A recent review article by J.C. Pile et al. summarizes the pathogenesis of anthrax.¹ The sequence is always the same: spores enter the body, germinate, and multiply; toxins are elaborated in the process; and consequences occur.

HUMAN ANTHRAX

Humans acquire anthrax by agricultural or industrial exposure to infected animals or animal products (no human-to-human transmission of anthrax has been re-

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ported). The true incidence is unknown because anthrax is not a reportable disease in several African countries. In the United States, less than one case has been reported annually during the past 20 years; most of these cases have resulted from contact with wool or animal hair. In livestock populations, anthrax is also becoming less frequent thanks to aggressive animal vaccination programs; however, in the past few years the incidence has gone up in Africa, probably because vaccine implementation has been sporadic in some developing countries.

Of the three forms of human anthrax—cutaneous, gastrointestinal, and inhalational—cutaneous is by far the most common, accounting for more than 90% of reported cases. The characteristic black eschar evolves several days after the spores enter the body through cuts or abrasions. Significant local edema, fever, malaise, and regional adenopathy may accompany the skin lesion, but mortality is less than 1% if appropriate antibiotic therapy is administered.

Gastrointestinal anthrax follows ingestion of spore-contaminated meat. This is a rare but more life-threatening form of the disease because germination occurs in localized gut lymphoid tissue. When hemorrhage, necrosis, and bacterial dissemination occur, sepsis syndrome with associated multiorgan-system dysfunction may be lethal.

Airborne spores of less than 5 μm diameter transmit inhalational anthrax. If a sufficient inoculum reaches deep into the bronchial tree, the same pathophysiologic cascade of local and regional lymph node involvement, release of toxic substances, and bacteremia ensues. Autopsies of infected humans consistently reflect the systemic nature of this disease and demonstrate widespread organ system damage, including hemorrhagic mediastinitis, meningitis, and gastrointestinal lesions.

As with other major infections, antibiotics, fluid management, and attentive bedside care are keys to good outcomes. Conventional strains of anthrax are susceptible to many antibiotics; penicillin is the drug of choice, but ciprofloxacin and doxycycline are also effective. Post-exposure antibiotic prophylaxis and vaccination are thought to be efficacious, but vaccine availability is an issue.

Epidemics of anthrax are rare but disturbing because they point out the virulence of the infection, the relative ease of transmission, and the potential for applications in biological warfare and terrorism. Thousands of human cases were reported in Zimbabwe from 1978 to 1980 after a major breakdown in veterinary care during a civil war. Most infections were of the cutaneous variety, but approximately 100 people died. A well-chronicled outbreak of inhalational anthrax occurred in the former Soviet Union in 1979 after an accidental release of spores into the environment at a microbiologic facility near Sverdlovsk. Downwind contamination caused many human cases (at least 66 fatalities) as well as significant livestock disease.

BIOLOGICAL WARFARE AND TERRORISM

Anthrax has long been associated with biological warfare potential. In the United States, extensive research was done for decades until President Nixon terminated our offensive biological weapons program in 1970. The United Nations ratified a worldwide treaty based on the 1972 Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological and Toxin Weapons and on their Destruction, which went into effect in 1975 with over 100 nations signing. Even so, bioweapons development has continued in many countries, including the former Soviet Union, Iraq, Iran, China, Korea, and Egypt.

Before the Persian Gulf War, coalition forces trained extensively for biological warfare. Part of the preparation included anthrax toxoid vaccination for 150,000 U.S. troops. In addition, enough ciprofloxacin was gathered to provide a one-month course of chemoprophylaxis for 500,000 soldiers. This summer, the Department of Defense will begin vaccinating the entire U.S. military force—about 2.4 million active duty and reserve troops—against anthrax. Recent experiences with radical extremist groups in this country also have underscored the potential for harm associated with threatened or actual use of biological agents.

MANAGEMENT AND CONTROL

Key elements in the management and control of a large-scale anthrax exposure involve preemptive action, early recognition, prompt triage, and antibiotic and vaccine therapy. We have yet to effectively organize resources at the community, state, or national level to cope with acts of biological terrorism today. However, there is growing acknowledgment that our societal immunity has waned; recognizing this vulnerability may be the first step in discovering a solution to the problem. Can the scientific and political leadership of today's world surmount the challenge of an ancient disease? Koch, Pasteur, and other pioneers of the last century faced the same question. **MM**

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Emergency Upper Gastrointestinal Bleeding

Management and Outcomes in Specialty Private Practice

Dorothy I. Whitmer, M.D., John I. Allen, M.D., Arnold P. Kaplan, M.D., Coleman I. Smith, M.D.,
Bradford G. Stone, M.D., and Cecil H. Chally, M.D.

ABSTRACT

Severe upper gastrointestinal (UGI) bleeding is a common medical emergency associated with significant morbidity and mortality. Recent studies from selected academic medical centers show that emergency UGI endoscopy with therapeutic intervention prevents recurrent hemorrhage, reduces complications, and limits costs. We determined prospective outcomes for patients presenting to 11 hospitals in Minneapolis and treated by 17 gastroenterologists from an independent single-specialty group. All 291 patients with severe UGI bleeding seen from July 1994 to January 1995 were enrolled and treated according to a guideline that the gastroenterologists had previously agreed upon. Chart review after hospital discharge showed that therapeutic endoscopy resulted in substantial reductions in the risk of recurrent bleeding compared with recent historic controls; the reductions were comparable to those seen in randomized studies from academic centers. Low risk of recurrent bleeding was associated with fewer blood transfusions and fewer days in hospital and in ICU. We conclude that 1) committed specialists can develop and adhere to treatment plans that optimize patient benefit and limit costs, and 2) therapeutic endoscopy performed by gastroenterologists in community hospitals may be as effective as endoscopy performed by academicians with a special interest in UGI bleeding.

Severe upper gastrointestinal (UGI) bleeding is a medical emergency associated with mortality of 10% and significant morbidity. Approximately 300,000 adults are hospitalized each year in the United States with UGI bleeding, either as a primary event or a comorbid condition.¹ About 50% of these patients bleed from gastric or duodenal ulcers; another 10% bleed from esophageal varices. Although patients whose bleeding stops during their hospitalization may do well without intervention, those with recurrent hemorrhage have poorer outcomes, such as multiple blood transfusions, emergency surgery, prolonged hospitalization, and more costly care.

Investigations in the early 1980s² demonstrated that identifying the bleeding site by emergency UGI endoscopy does not improve outcomes, largely because no medication can prevent recurrent bleeding in a patient with a peptic ulcer. However, further study has shown that physicians can determine accurately the risk of recurrent bleeding from findings at emergency UGI endoscopy and administer effective endoscopic treatment to high-risk patients. In peptic ulcer disease, for example, a clean ulcer base is associated with a rebleeding risk of 5%, whereas a visible vessel in the ulcer base will rebleed in up to 80% of patients.²

Recently, several controlled trials at academic research centers demonstrated that emergency endoscopic treatment of high-risk lesions reduces bleeding recurrence from peptic ulcer disease and esophageal varices, thus improving outcomes and reducing costs.^{1,3} Endoscopic therapeutic interventions include injection of solutions such as epinephrine or saline to tamponade a vessel and electrocautery, in which a probe is

pressed against a lesion and thermal energy anneals the sides of a blood vessel and seals off the bleeding site.³ Major complications are rare and include perforation (0.5%) and bleeding (0.3%).²

Virtually all information concerning therapeutic endoscopy in emergency UGI hemorrhage has been reported by a few nationally recognized authorities with a career interest in UGI bleeding. Such studies typically are conducted at a single academic center where one or two investigators perform endoscopy. In our study, we sought to discover whether patients with UGI bleeding who presented at a variety of community hospitals could be treated successfully by specialists in private practice. We also sought to determine the effectiveness of specialty group compliance with a consensus practice guideline that provided indications for therapeutic endoscopy, and we stratified patients according to risk assessment.

METHODS

PATIENT SELECTION

Adult patients seen by Digestive Healthcare gastroenterologists at acute-care facilities in the Minneapolis metropolitan area from July 25, 1994, to January 31, 1995, were enrolled if they met the following conditions: 1) significant visible bleeding, such as hematemesis, blood in the stomach (detected by nasogastric tube), melena, or bloody stool (anemia or occult blood in the stool did not qualify the patient for enrollment); 2) hemodynamic instability (e.g., syncope or drop in blood pressure) or fall in hemoglobin; 3) UGI endoscopy performed within 36 hours of presentation; 4) final diagnosis of UGI bleeding. We excluded patients

who were bleeding beyond the second portion of the duodenum. We did not exclude patients taking anti-coagulants or antiplatelet agents, or patients with significant organ system failure. All patients who met the above criteria were enrolled. We did not seek specific information regarding comorbid illness in each patient in this study.

ENDOSCOPISTS AND FACILITIES

All endoscopy was performed by the 17 board-certified or board-eligible gastroenterologists of Digestive Healthcare, P.A., an independent professional association of gastroenterologists in the Minneapolis metropolitan area. Digestive Healthcare is a division of Minnesota Gastroenterology, P.A.

All acute-care hospitals in the Minneapolis metropolitan area served by Digestive Healthcare gastroenterologists were included in the study. These facilities varied widely in size, mission, and range of care, from a large urban tertiary care teaching hospital that provides organ transplantation (Abbott Northwestern Hospital) to urban general hospitals (Fairview Riverside Medical Center and North Memorial Medical Center), suburban general hospitals (Fairview Southdale Hospital, Mercy Hospital, Methodist Hospital, Unity Hospital), small suburban community hospitals (Fairview Ridges Hospital, St. Francis Regional Medical Center), and two outlying facilities (Queen of Peace Hospital and Waconia-Ridgeview Medical Center).

A total of 291 patients with 310 episodes of emergency UGI bleeding were enrolled over the six-month study period. The number of patients seen at each of the 11 facilities is shown in Figure 1. Abbott Northwestern had the largest number of patients (83), followed by Fairview Southdale (62), Fairview Riverside (44), and Unity (42).

ENROLLMENT AND DATA COLLECTION

Gastroenterologists enrolled patients by completing a questionnaire at the time of endoscopy and submitting the form to one of the authors. Data requested were: physician endosco-

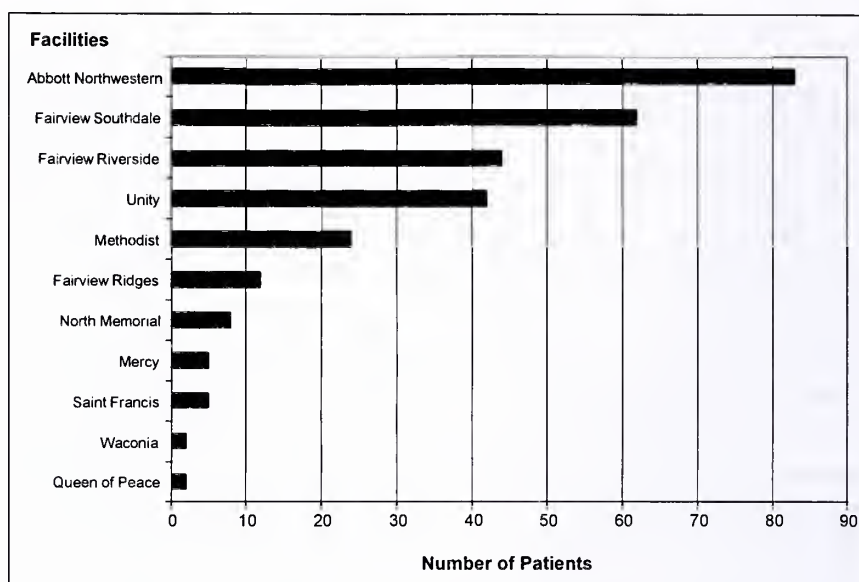


Figure 1—The number of patients admitted to each of 11 medical facilities in the Minneapolis metropolitan area.

pist, facility, type of bleeding lesion, appearance of the ulcer base where appropriate, and type of therapeutic endoscopy performed, if any. We then entered the responses into a database.

To ensure that 100% of eligible patients were enrolled, a list of all patients who had endoscopy for UGI bleeding during the study period was generated using ICD-9 codes. We also reviewed clinical records for patients not already enrolled in the study and entered eligible patients into the database retrospectively.

To determine outcomes, we examined hospital records of patients whose source of bleeding was gastric or duodenal ulcers or esophageal varices. Outcomes noted were 1) number of units of packed red cells transfused; 2) number of days in hospital and in intensive care; and 3) whether bleeding recurred after endoscopy but during the same hospitalization. Recurrent bleeding was defined as significant visible bleeding (hematemesis, melena, or hematochezia) in conjunction with a hemoglobin drop of at least 0.5 g after initial postendoscopy stabilization, so that the attending gastroenterologist felt that repeat endoscopy was indicated. In addition, for peptic ulcer disease, we determined whether surgery was required to control bleeding and hospital mortality.

ENDOSCOPIC DIAGNOSIS

Gastroenterologists identified the cause of hemorrhage as either an actively bleeding site or an endoscopic lesion judged to have been the source of bleeding. When blood was seen in the UGI tract but no specific lesion (e.g., ulcer) could be identified, or if lesions were judged too insignificant to account for the hemorrhage, then the gastroenterologist recorded "site not found." A Dieulafoy (pinpoint) ulcer was diagnosed only if the lesion was actively bleeding.

APPEARANCE OF THE ULCER BASE

Ulcers were classified according to the appearance of the base: active bleed, visible vessel, clot, or clean ulcer base. Active bleeding was defined as spurting rather than oozing. Data for flat spots, which have a low risk of recurrent bleeding, were combined with data for clean ulcer base.

THERAPEUTIC ENDOSCOPY FOR PEPTIC ULCER DISEASE AND BLEEDING ESOPHAGEAL VARICES

When therapeutic endoscopy was indicated (see Figure 2), the ulcer was treated with injection, cautery, or both. The injection used was 1:10,000 epinephrine or saline via a sclerotherapy needle. Cautery was applied with a 7 or 10 French multipolar electrocoagulation probe ("BICAP"). We did not use laser or heater probes.

Indications for treating variceal bleeding included active bleeding observed at endoscopy, stigmata from recent bleeding (clot or red wale markings), or recurrent bleeding in a previously untreated patient. Variceal bleeding was treated with injection therapy using sodium tetradecyl sulfate or sodium morrhuate. Physicians did not use banding, because variceal banding equipment had been recalled by the manufacturer during the enrollment period for this study.

PATIENT MANAGEMENT

Recommendations for managing the patients enrolled in this study were based on an algorithm developed by Digestive Healthcare's Clinical Practice Committee and approved by all of the gastroenterologists. A summary of the guideline is shown in Figure 2. The algorithm addresses therapeutic endoscopy indications, triage of patients to medical floor or intensive care based on endoscopic findings, and recommendations for postendoscopy diet and duration of hospitalization. Patients' care might deviate from that outlined in the algorithm if they had other primary diagnoses or if an admitting physician or gastroenterologist made other decisions based on clinical circumstances.

RESULTS

ENDOSCOPIC DIAGNOSIS

The most common cause of bleeding was peptic ulcer disease (see Figure 3). Of 291 patients, 80 bled from gastric ulcers and 92 bled from duodenal ulcers, accounting for 59% of bleeding sites. Esophageal variceal bleeding was the next most common diagnosis, with 38 episodes accounting for 13% of bleeding sites. Gastritis and Mallory-Weiss tears accounted for another 13% of bleeding lesions.

Because the proportion of ulcers with a clean base or flat spot, clot, visible vessel, or active bleeding was similar for both gastric and duodenal ulcers, these data were combined (see Table 1). High-risk lesions (visible vessel or active bleed) were seen in 36% of ulcers, which reflects the study's intent to select patients with severe bleeding. The proportion of patients with each type of ulcer base

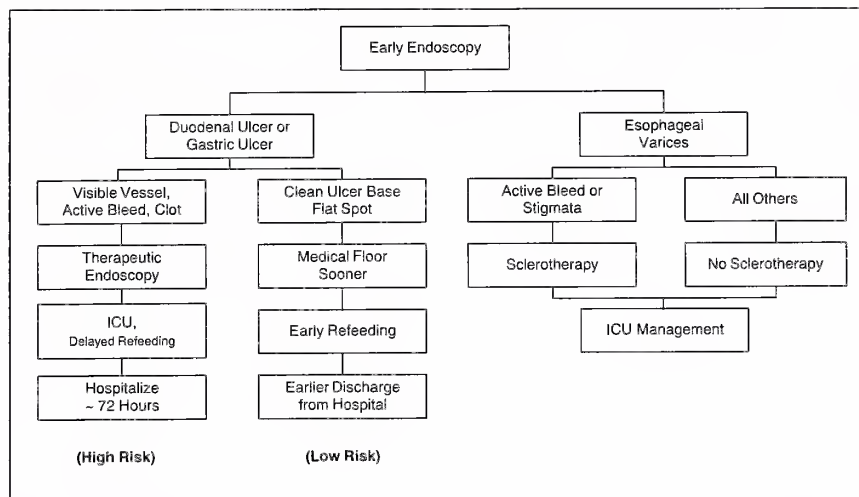


Figure 2—Summary of the Digestive Healthcare algorithm for management of emergency upper gastrointestinal bleeding.

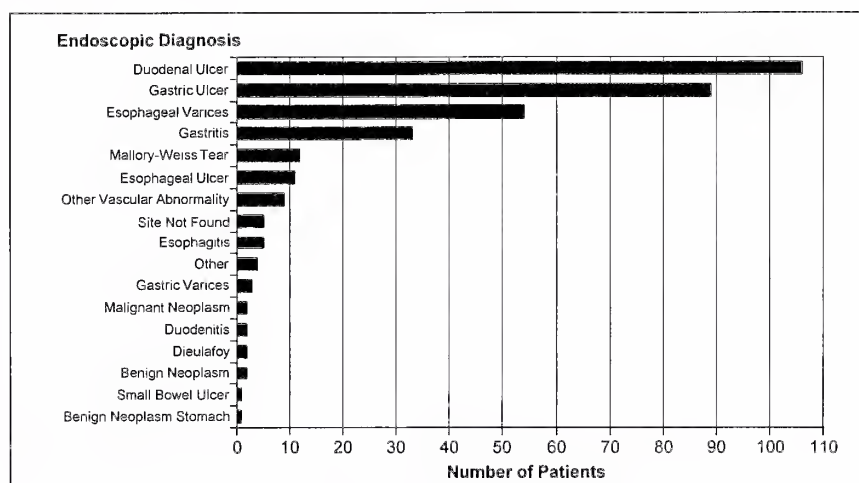


Figure 3—The number of patients with each type of bleeding source as determined at endoscopy.

is comparable to data from Jensen⁴ (see Table 1), which were obtained for patients presenting to a single hospital with emergency upper gastrointestinal bleeding.

THERAPEUTIC ENDOSCOPY FOR BLEEDING PEPTIC ULCER DISEASE

- **Low-risk lesions:** Figure 4 shows the number of patients with each type of ulcer base who received no therapeutic endoscopy, cautery, or injection. For patients with a clean ulcer base or flat spot, therapeutic endoscopy was generally not performed, in adherence with the guideline. Withholding therapeutic endoscopy for low-risk lesions reduces costs.

- **High-risk lesions:** Virtually all patients with high-risk lesions (visi-

ble vessel or active bleed) were treated with either cautery, injection, or both (see Figure 4). Since therapeutic endoscopy has been shown to reduce recurrent bleeding (Figure 2), gastroenterologists participating in this study made every effort to treat all high-risk lesions. As shown in Figure 4, of 49 patients with a visible vessel, 48 were treated—13 with cautery, 14 with injection, and 21 with both. For the 13 patients with active bleeding, four received cautery, five injection, and four both. In the one untreated case, it was not possible to approach the visible vessel "en face" to anneal the vessel walls.

- **Intermediate-risk lesions:** A clot that adheres to an ulcer base despite washing with water is associated with

Table 1

Proportion of patients with each type of ulcer stigma compared with historic controls

Ulcer stigma	Prevalence (%)	
	Jensen et al ⁴ n = 100	Digestive Healthcare 1995 n = 172
Clean ulcer base/flat spot	47	41
Clot	15	13
Visible vessel	22	28
Active bleeding	16	8

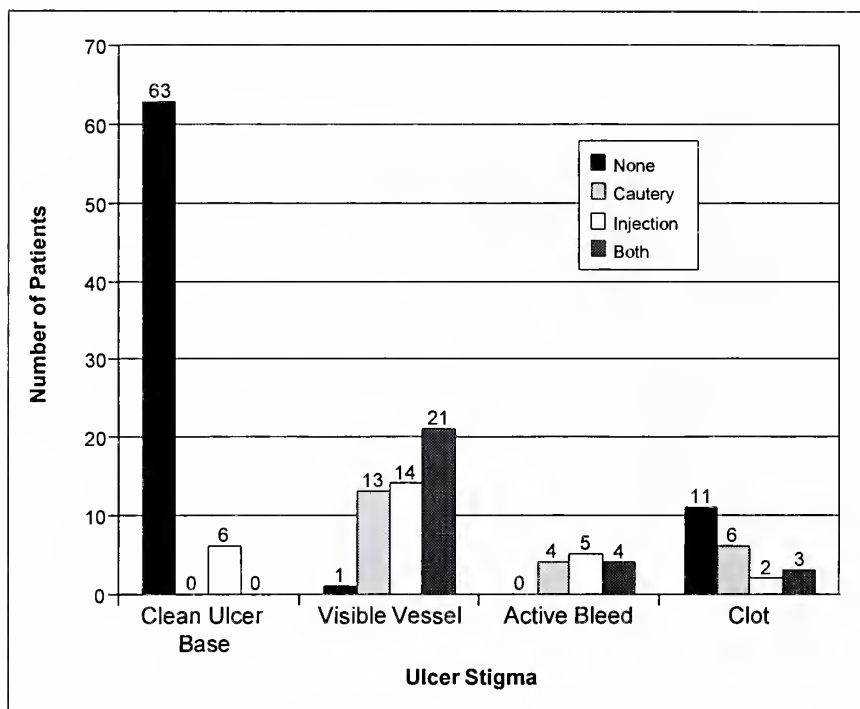


Figure 4—The number of patients with gastric or duodenal ulcers who received cautery, injection, or both, or no therapeutic endoscopy, shown by ulcer stigma.

an intermediate risk of rebleeding. Ulcers with clots may have low-risk lesions or a vessel under the clot. Some experts advocate forcibly removing the clot, as with a biopsy forceps, but it is not clear whether the outcome would be improved with therapeutic endoscopy of an underlying visible vessel or dramatically worsened by causing massive bleeding. The gastroenterologists used their best judgment in each case, and the management was variable (see Figure 4): of 22 patients who had ulcers with clots, half (11) were treated with

therapeutic endoscopy and the remainder were not.

OUTCOME OF ENDOSCOPIC MANAGEMENT

The percentage of patients with each type of ulcer base who rebled is shown in Table 2, in comparison with data from two other reports: a review of studies of untreated (no therapeutic endoscopy) ulcer patients² and a 1990 series from Jensen of untreated patients.⁴ We used untreated historic controls instead of randomizing our patients into treated and untreated

groups because of the ethical mandate to provide the demonstrated benefit of therapeutic endoscopy. The proportion of our patients with rebleeding from a clean ulcer base or flat spot was similar to those of the historic controls (6% vs. 6% and 4%). However, for ulcers with clots, our rebleeding rate (17%) was lower than in either study of untreated controls, representing a 48% reduction compared with Jensen.⁴

An even more marked benefit was seen for patients with visible vessels, for whom treatment resulted in a 68% reduction in recurrent bleeding episodes compared with untreated patients.⁴ For our patients with actively bleeding ulcers, the impact of therapeutic endoscopy was also substantial: a 65% reduction in recurrent bleeding compared with untreated patients⁴ and a 44% reduction compared with the mean of series.²

A total of 30 patients with bleeding esophageal varices were seen during 38 admissions (24 patients each admitted once, five admitted twice, and one admitted four times). In 19 admissions, patients required sclerotherapy; in the remaining 19 admissions, patients underwent diagnostic endoscopy only. Seventeen of the 19 patients treated with sclerotherapy (89%) did not require further measures to control bleeding during hospitalization. Of the untreated patients, 18 of 19 (95%) did not bleed again during hospitalization.

TRANSFUSION REQUIREMENT, DAYS IN ICU, AND DAYS IN HOSPITAL

Because the values for the data varied greatly, results are expressed as the median rather than the mean (see tables 3 and 4). For peptic ulcer disease (Table 3), the median number of units of packed red cells transfused, days in ICU, and days in hospital all tended to be higher for patients with high-risk lesions than for patients at low risk. The data also demonstrate that recurrent bleeding, an unfavorable outcome, is associated with more transfusions and longer stays in the ICU and in the hospital for patients with peptic ulcers as well as for those with bleeding esophageal varices (Table 4).

Table 2

Percentage of patients rebleeding according to ulcer stigma, compared with historic controls

Ulcer stigma	Rebleed rate (%)		
	Laine & Peterson ² (not treated) n=100	Jensen ⁴ (not treated) n=100	Digestive Health 1995 (not treated) n=100
Clean ulcer base/ flat spot	6 (0-13)*	4	6
Clot	22 (14-36)	33	17†
Visible vessel	43 (0-81)	50	16‡
Active bleeding	55 (17-100)	88	31§

*Mean and range from reviewed series

†, ‡, § Compared to Jensen⁴

† 48% reduction

‡ 68% reduction

§ 65% reduction

Table 3

Transfusions and hospitalizations according to ulcer stigma, stratified for recurrent bleeding vs. no recurrent bleeding

Ulcer stigma	Units RBCs transfused	Days in ICU	Days in hospital
Clean ulcer base/flat spot	2* (4)†	0 (1)	2 (6)
Clot	2 (5)	0 (3.5)	4.5 (5.5)
Visible vessel	2 (8)	1 (2)	3 (6)
Active bleed	2.5 (6.5)	1 (1)	4 (5)

*Median numbers for those who did not rebleed.

†Numbers in parentheses indicate median number for those who did rebleed.

Table 4

Transfusions and hospitalization for patients with bleeding esophageal varices, according to endoscopic therapy, stratified for recurrent bleeding vs. no recurrent bleeding

	Units RBCs transfused	Days in ICU	Days in hospital
Sclerotherapy	3* (5.5)†	1 (2.5)	4 (6)
Untreated	2 (5)	0 (0)	4 (5)

* Median numbers for those who did not rebleed.

† Numbers in parentheses indicate median number for those who did rebleed.

SURGERY AND MORTALITY FOR PEPTIC ULCER DISEASE

Six patients (3.5% of those with peptic ulcers) required surgery to control bleeding from gastric or duodenal ulcers. At initial endoscopy, one of these patients had an active bleed (one of 14 patients with active bleeds, or 7%), one had a nonbleeding visible vessel (2% of all patients with a nonbleeding visible vessel), and three had clots (14% of those with clots). (The ulcer was unclassified in the sixth patient.) Thus, a clot on the ulcer base was associated with the highest rate of failed endoscopic management, possibly due to low rates of cautery and/or injection therapy (50% vs. 98% for visible vessels and 100% for active bleeds). Four patients underwent oversew of a duodenal ulcer, and two patients were operated for gastric ulcers.

There were six deaths among ulcer patients (3.5%) during the study period; none of these were for bleeding that could not be controlled. Five deaths were related to organ failure or cancer; one patient died of bleeding, but had been terminally ill and had refused operative intervention. One patient who had operative oversew of a duodenal ulcer died; this patient had malignancy with metastases to the liver.

DISCUSSION

Previous studies of the role of therapeutic endoscopy in emergency UGI bleeding have been performed at academic medical centers by career investigators.^{1,3} This is the first community-based study that has examined outcomes of patients with bleeding who were seen in different types of facilities and treated by private-practice gastroenterologists. The size of our practice allowed enrollment of almost 300 patients within a six-month period, a number usually seen only in multicenter studies. We felt that the cost and effort of this study were justified by the need for outcomes data, which help patients, payers, and providers evaluate services, develop clinical pathways, and improve the quality and efficiency of medical care.

Some patients were seen in suburban hospitals, but the largest single



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group, 29%, were seen at a tertiary urban facility (Abbott Northwestern). Thus, the study did not select for healthier patients or those with a lower risk of complications. In fact, the proportion of patients with various stigmata of ulcer bleeding is similar to those observed in an academic setting.

The gastroenterologist authors of this study followed the guideline that they had previously approved. For example, therapeutic endoscopy (cautery or injection) was performed consistently for high-risk stigmata and generally avoided for low-risk lesions. Furthermore, patients with low-risk lesions clearly spent less time in the ICU and the hospital than those with high-risk lesions if there was no recurrent bleeding. Sclerotherapy for esophageal variceal bleeding was performed according to indications in all cases.

Lacking guidance from controlled trials, we were unable to make a recommendation for treating ulcers with adherent clots; therefore, use of therapeutic endoscopy was inconsistent. This variability in management

is reflected in suboptimal results: the rebleeding rate for ulcers with clots was reduced, but not as much as for high-risk lesions (see Table 2), and patients with clots spent more days in the hospital than those with high-risk stigmata, whether or not recurrent bleeding was observed (see Table 3). Moreover, ulcer patients with clots had the highest rate of surgical intervention. We hope that an ongoing multicenter trial⁵ will provide recommendations for practice so variability can be reduced and outcomes improved.

Recurrent bleeding proved a critical factor that determined other outcomes in this study (see Table 3). Irrespective of the appearance of the ulcer base, patients who did not rebleed were transfused a median of two units, whereas patients who did rebleed were transfused four to eight units. Those who did not rebleed stayed a median of 0 to 1 day in the ICU and 2 to 4.5 days in the hospital, but those who bled recurrently stayed 1 to 3.5 days in the ICU and 5 to 6 days in the hospital. Reducing recurrent bleeding rates will improve out-

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comes. Other studies have also demonstrated significant cost reduction.³

Our most striking finding was that recurrent bleeding from peptic ulcers with clots, visible vessels, or active bleeding was reduced considerably (48% to 68% compared with historic controls) after endoscopic treatment by gastroenterologists in community-based medical facilities (see Table 2). We observed this reduction even when we included patients taking anticoagulants or platelet inhibitors, which tend to increase recurrent bleeding rates.⁶ These data are similar to those reported by a nationally recognized expert at an academic institution.³ Moreover, we demonstrated initial control of esophageal variceal bleeding in 90% of patients treated with sclerotherapy, a number that compares favorably with the results from a recent trial.⁷ This may be the first report demonstrating the outcomes of treatment for emergency UGI bleeding that can be expected in the community from specialty providers who are concerned with quality improvement. **MM**

The authors are practicing gastroenterologists of Digestive Healthcare, a division of Minnesota Gastroenterology, and are on the staffs of the Minneapolis, Minnesota, hospitals involved in this study.

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Hepatitis C

Infection, Transmission, Recognition, and Treatment

Primary care physicians should screen patients at risk for Hepatitis C, a significant but generally unrecognized public health problem.

John B. Gross, M.D.

Editor's Note: Hepatitis C virus infection is common, often silent, almost always chronic, can lead to cirrhosis and hepatocellular cancer, and is a major health problem. Deaths related to chronic hepatitis C are expected to increase dramatically in the next 10 to 20 years. Yet, many cases of infection go undiagnosed because of a lack of recognition by patients and physicians. Dr. Gross's excellent review suggests which patients to screen and to treat, and how to develop consultation strategies. Hepatitis C is not hopeless, and we are not helpless in our diagnosis and treatment of patients with this chronic disease.

—Barbara Yawn, M.D., M.Sc.,
Series Editor

Hepatitis C used to be called "non-A, non-B hepatitis." Eighty-five percent of acute hepatitis C virus (HCV) infections become chronic, making it the most common cause of chronic viral hepatitis in the United States.¹ The high rate of chronic infection and the lack of symptoms among infected individuals have made chronic hepatitis C a major public health problem. The Centers for Disease Control and Prevention (CDC) estimates that as many as 4 million Americans, or 1.5% of the population, may be chronically infected with HCV. Chronic hepatitis C can lead to cirrhosis, liver failure, and hepatocellular carcinoma.^{1,2} Each year, 10,000 Americans die of complications related to chronic hepatitis C, and the CDC expects this figure to triple in the next 10 to 20 years.¹ Chronic hepatitis C is already the leading indication for liver transplantation in the United States, accounting for 30% of cases. The table (see facing page) contrasts 1995 estimates of the number of persons infected in the United States, the estimated cost to the economy, and the amount of research funding for HIV, HBV, and HCV.

EPIDEMIOLOGY

The incidence of acute hepatitis C in the United States probably peaked at about 175,000/year in 1989 and has now declined to around 30,000/year.¹ Many HCV infec-

tions were acquired from transfusions prior to the introduction of blood tests for HCV in 1990 to 1992. Today, the risk of HCV infection from a blood transfusion is only about 0.001% per unit transfused. Factors currently associated with acute infection include injection or intranasal drug use with sharing of paraphernalia, sexual contact with an infected person, multiple sexual partners, low socioeconomic status, imprisonment, and occupational exposure, leaving only about 5% of new infections unexplained. Groups with a high prevalence of HCV infection include hemophiliacs, hemodialysis patients, IV/intranasal drug users, patients in inner-city emergency rooms, and long-term prisoners.

TRANSMISSION

SEXUAL INTERCOURSE

The risk associated with a single sexual encounter is negligible, and the cumulative risk to an uninfected partner in a monogamous relationship over 10 to 20 years amounts to only 5%.³ However, because of the very large number of sexual encounters in the population, the number of people infected via sexual contact is significant. For this reason, infected persons with multiple sexual partners should be advised to use barrier protection such as condoms. There are no documented cases of nonsexual transmission within a household.

MATERNAL-INFANT

The risk of maternal-infant transmission is 5% or less, but may be higher if there is simultaneous HIV infection. There are no recommendations against pregnancy for infected women.³ The baby may acquire anti-HCV antibody passively and the serum ALT is not reliably elevated in infected infants, so infants of infected mothers should be tested for HCV RNA (see facing page). There is no evidence that HCV is transmitted via breast-feeding.

HEALTH CARE WORK

The risk of infection from a random needle stick in the hospital is about 0.1%; if the patient is known to be

Table

Comparison of estimated prevalence, economic cost, and NIH research funds for three chronic viral illnesses in the United States in 1995

	Number infected	Annual cost	Annual NIH funds
HIV	0.9 million	Unknown	\$1.4 billion
HBV	1.2 million	\$360 million	\$14 million
HCV	4 million	\$4 billion	\$1.7 million

infected, the chance is 5% to 10%.³ Transmission from infected health care workers to patients appears to be rare. Therefore, infection cannot be used as a reason to keep someone from working, although it may be wise to review infection-control procedures.

THE VIRUS

HCV is a single-stranded RNA virus in the Flavivirus family. The genome codes for a single polyprotein precursor containing at least three structural proteins and several nonstructural enzymes, including a serine protease and an RNA polymerase (see the figure, page 30). The protease is necessary to split and release the active forms of the other functional proteins and, therefore, appears to be a good target for future drug development.

There are at least six main genotypes (species) of HCV and multiple subtypes. Genotype 1 accounts for about 70% of infections in the United States.⁴ Unfortunately, this genotype is less likely to respond to treatment than others. The virus is very prone to mutation, existing in a single individual as a heterogeneous population of slightly different genetic sequences, or "quasispecies." This genetic diversity enables the virus to escape the body's immune surveillance and is probably the reason for the high rate of chronic infection.

CLINICAL SPECTRUM OF DISEASE

LIVER DISEASE

During acute infection, only 25% to 35% of patients have symptoms, and fulminant hepatitis is rare.¹ In the chronic phase, about 30% of patients are asymptomatic with normal liver enzymes, 50% have elevated enzymes but no symptoms, and 20% have clinical liver disease.¹ There may be no symptoms or physical signs for decades after infection, and the first symptoms may be those of liver failure or portal hypertension.

It is not clear whether HCV infection always causes progressive disease or whether some individuals can remain healthy indefinitely.⁵ Chronic hepatitis C leads to cirrhosis in about 20% of patients within 20 years of infection.¹ The risk is increased among males, those infected after age 40, and those who drink alcohol.⁵ Among those with cirrhosis, the risk of developing

hepatocellular carcinoma is 15% to 20% per decade.⁶ Treatable hepatocellular cancers are being discovered by prospective surveillance, e.g., checking the serum alpha-fetoprotein and performing an ultrasound of the liver every six to 12 months.

EXTRAHEPATIC DISEASES

Chronic HCV infection may be associated with small-vessel vasculitis and is the most common cause of essential mixed cryoglobulinemia.¹ Evidence of HCV infection should be sought

in patients presenting with a purpuric rash, peripheral neuropathy, cerebritis, glomerulonephritis, or nephrotic syndrome. Approximately 20% of patients seen at Mayo Clinic with sporadic porphyria cutanea tarda have HCV infection, and even higher percentages are reported from other parts of the world.

DIAGNOSTIC TESTS

As yet, there are no diagnostic tests for HCV viral proteins. Infection is diagnosed by testing for the patient's antibody to HCV and/or testing directly for the virus RNA.⁷ The anti-HCV antibody sought during screening does not confer immunity; in fact, it is present simultaneously with the virus and is a marker of infection except in those who had self-limited infections but kept the antibody.

ANTIBODY TESTS

Commercial antibody tests have a sensitivity of around 95%. Initial antibody testing is performed with an enzyme immunoassay (EIA) that uses four target HCV protein fragments in solution with the patient's serum (see the figure). If positive, the presence of antibody is confirmed with a radioimmunoblot assay (RIBA) that tests the patient's serum against the same four HCV protein fragments attached to a strip, allowing greater specificity. If the patient's serum reacts with two or more of the bands on the RIBA strip, the test is positive; if it reacts with one strip, it is indeterminate. Truly infected patients may have indeterminate RIBA results, particularly those infected with non-1 HCV genotypes.

A positive anti-HCV test by EIA is enough to confirm the diagnosis of chronic hepatitis C in a high-risk patient who has evidence of chronic hepatitis.¹ In contrast, if anti-HCV antibody is confirmed by RIBA in a low-risk individual, the next step is to look for evidence of liver disease by physical examination and determination of the serum ALT. In this case, the physician should also look for evidence of HCV infection with an HCV RNA test (see below).

TESTS FOR HCV RNA

Qualitative RNA tests are designed to be very sensitive in order to determine if there is any virus in the blood. The

most sensitive of these is the polymerase chain reaction (PCR) assay, with a detection limit of around 100 viruses/ml. PCR assays are not standardized and may be unreliable if not performed by a major reference laboratory. Quantitative RNA tests measure the level of viral RNA in the blood. Although they may be useful in monitoring treatment, their limits of detection are as high as 1,000 to 200,000 viruses/ml and they should not be used for screening. The commercial tests for RNA quantitation, such as the branched DNA signal amplification assay, appear to be reliable from one lab to another. In contrast, quantitative assays based on PCR may be unreliable unless performed rigorously by a major reference laboratory.

It is important that the physician be aware of the type of assay that will be done when the test is ordered. Laboratories may change assays and reference laboratories from time to time for financial reasons, and this may result in changes in sensitivity and specificity.

GENOTYPING

The clinical utility of genotyping does not appear to be strong enough to warrant using it as a standard test at this point.

LIVER BIOPSY

Liver biopsy is the best way to determine the inflammatory severity and stage of fibrosis of chronic hepatitis C. There is an inconsistent relationship among symptoms, liver enzyme levels, and the histologic severity of disease.¹ A liver biopsy helps the physician assess the severity of disease, make a decision about treatment, determine the stage of disease for prognostic purposes, and ascertain whether cirrhosis is present for cancer surveillance purposes. Untreated patients with mild chronic hepatitis in the liver biopsy have a 50% chance of histologic progression over 10 years and a 10% chance of developing cirrhosis. Those with severe hepatitis or septal fibrosis almost always progress and have a 60% to 70% chance of cirrhosis over the same period.⁸

TREATMENT

RATIONALE

On the assumption that it prevents complications of liver disease, virus eradication is the primary goal of treatment. Up to now this has been unattainable in 85% of patients. A secondary goal is reduction of viremia and hepatic inflammation, but whether long-term suppressive treatment slows progression of disease has not been proven. Retrospective analyses have suggested that inter-

feron treatment may reduce the subsequent risk of hepatocellular cancer, but this likewise has not been tested prospectively. A few patients may feel better on treatment.

INTERFERON

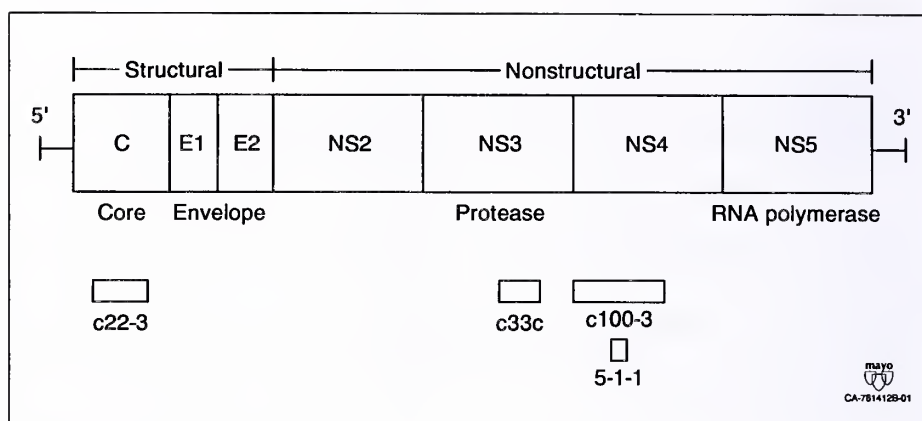
On the previously standard regimen of recombinant interferon alpha-2b, 3 million units (MU) subcutaneously three times weekly, about half of patients normalize the serum ALT, most of them clearing HCV viremia, but 60% to 70% of the responders relapse after stopping treatment.^{1,9} The labeling was recently changed to allow for treatment up to 24 months. Increasing the duration to 12 to 24 months does not increase the number of responders but decreases the relapse rate, raising the sustained virus disappearance rate to about 20%. Recombinant interferon alpha-2a has been licensed for 12 months of therapy, and a synthetic "consensus" interferon has been approved for six months of treatment. The three interferons have essentially equal clinical efficacy.

INDICATIONS

Treatment is recommended for patients who are most likely to progress to cirrhosis: those with persistent elevations of the serum ALT, HCV RNA in the blood, and a biopsy showing moderately severe hepatitis or some degree of fibrosis.^{1,9} The benefit of therapy is less clear among patients with mild hepatitis, cirrhosis, or age >60 and must be judged on an individual basis. Patients with mild hepatitis, in view of their generally good prognosis, may elect observation without treatment; if so, a liver biopsy should be repeated in three to five years and treatment strongly considered if there is evidence of histologic progression.¹

RESPONSE TO TREATMENT

Therapy is initiated at a dose equivalent to interferon alpha 3 MU three times weekly for a trial period of three months, with the intent to treat for 12 months. If the



Figure—The hepatitis C genome. The genome encodes a single polyprotein precursor that is subsequently cut into individual proteins by host enzymes and the HCV protease. The lower bars indicate the positions and the designations of the four HCV protein fragments used in second-generation EIA and RIBA assays.

serum remains positive for HCV RNA after three months of treatment, the likelihood of a subsequent response is extremely low and treatment should be discontinued. Although certain factors such as genotype and viral level show a rough correlation with treatment response, none of them should be used categorically to exclude a patient from treatment.

ADVERSE EFFECTS

Adverse effects of interferon therapy occur in the majority of patients, but only 5% need to discontinue treatment. Most patients develop a flu syndrome within a few hours after injection, but this postinjection phenomenon is usually gone by the third or fourth week. Reversible thrombocytopenia and leukopenia can occur early or late and require that a CBC be performed frequently. The two chronic effects that most frequently limit therapy are fatigue (40%) and emotional disturbances such as irritability and depression (25% to 30%).

CONTRAINDICATIONS

Because it could aggravate the preexisting condition, interferon treatment is contraindicated among patients with cytopenia (e.g., WBC <3,000 or platelets <75,000), severe depression, or autoimmune disease. Thyroid function should be normal before starting interferon. Patients with active chemical abuse may not be able to tolerate the acute adverse effects of treatment. Interferon may precipitate rejection among patients with previous transplants.

COMBINATION THERAPY

Ribavirin is an orally administered nucleoside analogue that has a suppressive effect on disease activity in chronic hepatitis C but by itself has no effect on HCV viremia.^{1,9} However, recent trials have shown that combining interferon with ribavirin leads to higher rates of sustained viral clearance than can be achieved with interferon alone. Among patients relapsing after a previous response to interferon monotherapy, 50% of those re-treated with the combination achieved sustained HCV clearance, compared with 5% of patients re-treated with interferon alone. The FDA has just recently approved the combination of interferon and ribavirin for the treatment of this patient group. The results of a similarly randomized trial among previously untreated patients are expected within the next few months. Patients on ribavirin develop a reversible hemolytic anemia that could be hazardous for those with underlying heart disease.

GENERAL RECOMMENDATIONS

ADVICE TO PATIENTS

Patients with chronic hepatitis C should abstain from drinking alcohol, as it is not yet clear whether any level of alcohol use is safe. No other specific dietary changes appear to be necessary. If possible, patients should be encouraged to start regular low-level aerobic exercise. Vaccination against hepatitis viruses A and B should be performed if natural immunity is not already present. In

particular, hepatitis A appears to carry a high risk of fulminant hepatitis among patients with chronic hepatitis C. Patients on treatment should have an examination every six months. Patients with precirrhotic disease who are not on treatment should have an examination once a year; those with cirrhosis should be seen every six months.

PATIENT REFERRALS

Generalists with experience in chronic hepatitis C may feel comfortable prescribing and monitoring interferon therapy. As treatment regimens continue to evolve, primary physicians may choose to refer untreated patients to a specialist. Consultation with or referral to a liver specialist is appropriate for patients who have failed initial therapy and are interested in further treatment, as well as those who have cirrhosis and reduced quality of life or an episode of decompensation.

PREVENTION

Postexposure prophylaxis with immune serum globulin is not effective. Preexposure prophylaxis awaits the development of an effective vaccine and continues to depend on preventing transmission from infected individuals. The NIH Consensus Development Conference recently made the following recommendations, based on U.S. Public Health Service guidelines:^{1,11}

1. Universal infection precautions should be used in health care settings.
2. Infected persons should not ordinarily donate blood, tissues, body organs, or semen. Infected organs might be considered in urgent life-saving situations.
3. Infected persons with multiple sexual partners should use barrier protection such as condoms. In monogamous, long-term relationships no changes in sexual practices are recommended.
4. Sexual partners of infected individuals should be tested for anti-HCV antibody.
5. In a household with an infected member, sharing of toothbrushes and razors should be avoided. It is not necessary to avoid close contact.
6. Pregnancy is not contraindicated for infected women. Breast-feeding is safe and should be encouraged.
7. Needle exchange programs are of proven benefit and should be expanded. (This last point was the opinion of the consensus panel and may be politically controversial even though it makes sense from an epidemiological point of view.)

MM

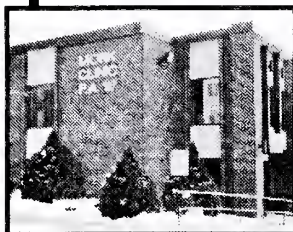
John Gross is a consultant in the Division of Gastroenterology and Hepatology, Mayo Clinic and Foundation, in Rochester, Minnesota.

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continued

Family Practitioners



Mork Clinic – Anoka

The history...

Mork Clinic provides the people in Andover, Anoka, Blaine, Coon Rapids and Elk River the best possible health care available. The founder of Mork Clinic, Dr. Frank Mork, established the clinic in 1931, and in 1988, to keep pace with the ever growing com-

munities, the clinic expanded to Elk River. In 1997, the clinic merged with East Main Physicians, adding two additional sites, and is constructing a new clinic to be opened in Andover in April 1998. The practice now includes 38 physicians with nine Nurse Practitioners, five Physician assistants and over 280 support staff in a variety of specialties, including Family Practice, OB/GYN, Internal Medicine, Pediatrics, General Surgery, ENT, Gastroenterology, Rheumatology, Allergy and Orthopedics.

The opportunity...

As our suburban communities grow, we find the need for additional staff. We are seeking Family Practitioners for Mork Clinic to work **flexible full time**. Each physician sees approximately 30 patients on a daily basis, and is supported by a full staff of health care professionals.

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Mork Clinic is an independently physician run clinic. Physicians are eligible to become shareholders after working with the clinic for two years. Each shareholder has a stake in how the clinic is run and the types of benefits offered. These positions offer a competitive compensation and benefits package.

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Embark on a career journey that is fulfilling and rewarding and become a member of a team of physicians playing an integral part in the community's health and welfare. For further information, please contact Lori Fake at (612) 883-5337 or (800) 472-4695. For consideration, forward your CV to: HealthPartners, Physician Services, PO Box 1309, Minneapolis, MN 55440. You may also e-mail Lori at lori.m.fake@healthpartners.com.

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ANNOUNCEMENTS



MMA Docs Help Set AMA Policy

Minnesota's delegation to the AMA is chaired by A. Stuart Hanson, M.D. Delegates attending the 1998 AMA Annual Meeting in Chicago included Robert D. Christensen, M.D.; Frank J. Indihar, M.D.; Anthony C. Jaspers, M.D.; Carolyn McKay, M.D.; Ben P. Owens, M.D.; and Andrew J.K. Smith, M.D. Alternate delegates are Raymond G. Christensen, M.D.; Kenneth W. Crabb, M.D.; Lyle Munneke, M.D.; Thomas L. Peyla, M.D.; Sally J. Trippel, M.D.; and John Van Etta, M.D.

Member Earns Coveted Fellowship

Stephen P. England, M.D., a pediatric orthopedic surgeon at Gillette Children's Specialty Healthcare in St. Paul, has been chosen as a White House Fellow. England is a St. Paul native and MMA member.

Minnesota Docs Lead Antitobacco Action at AMA

In a year in which tobacco-related news has dominated the headlines, the Minnesota delegation again led the AMA House of Delegates to take a strong, uncompromising antitobacco stance at the AMA Annual Meeting in Chicago.

The meeting was under way when the Windy City erupted in celebration of the Bulls' NBA championship win. Although impressed by the Bulls' athletic skill and team spirit, Minnesota delegates saw the team's televised victory party—at which team members were shown smoking celebratory cigars—as an opportunity to publicize the health dangers of cigars. The image led to passage of an emergency resolution calling for sports associations, teams, and players—whose behavior is emulated by children around the world—to avoid using cigars on TV and at events seen by the public.

The resolution, introduced by the delegations from Minnesota, Michigan, the American College of Preventive Medicine, and the American Society of Addiction Medicine, notes that cigar sales have increased in recent years, and so has cigar use among adolescents. Capitalizing on what some delegates called a “teachable moment,” it also asks pro athletes to take part in educational programs and media campaigns to discourage kids and teens from smoking.

Using tobacco products in front of millions of TV viewers is “just what the tobacco industry wants them to do,” said A. Stuart Hanson, M.D., chair of

the Minnesota delegation. “These are superb athletes and excellent role models, if they behave themselves, but (glamorizing tobacco) could potentially undermine all the good that they do.

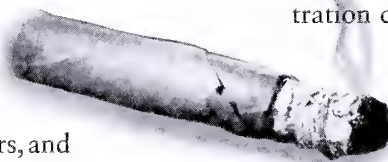
“It would be wonderful if athletes could get out and advocate for non-tobacco use, the way they do for other drugs,” Hanson added.

He noted that the television industry shares a responsibility to resist back-handed efforts by tobacco companies to circumvent the law that prohibits marketing their products on TV.

Reducing Nicotine Content in Cigarettes

The HOD enthusiastically endorsed the AMA Council on Scientific Affairs report on reducing the nicotine content in cigarettes. The report, created in response to a Minnesota resolution to the 1996 AMA Interim Meeting—which called on the AMA to push for removal of nicotine from cigarettes—led to several recommendations, including:

- that the Food and Drug Administration does have, and should continue to have, authority to regulate tobacco as a drug;
- that the FDA conduct or fund research on how tobacco products might be modified to facilitate easier cessation;
- that the FDA assert its authority over tobacco companies to require that they reduce the addictive potential of their products within five to 10 years;
- that the AMA work to measure, or facilitate measurement of, changes in



ANTITOBACCO *cont. on page 35*

VIEWPOINT

Paul C. Matson, M.D.

Chair, MMA Board of Trustees



Demand for Assisted Suicide Signals Underlying Problem for Physicians

Assisted-suicide continues to make the news. Attorney General Janet Reno's announcement that the Food and Drug Administration would not be used to censure physicians who comply with Oregon's "Death With Dignity Act" eased fears that physicians in that state might hesitate to provide adequate pain relief for their dying patients.

And in Jack Kevorkian's home state of Michigan, supporters of physician-assisted suicide collected enough signatures to put a measure on the ballot to legalize the practice. Although the Michigan initiative is considered unlikely to pass, it is a symptom of a serious underlying problem—too many people fear dying in terrible pain, losing control, and receiving unwanted medical treatment when death is imminent.

The Minnesota Medical Association remains firmly opposed to physician-assisted suicide, but we cannot ignore the real fears that underlie attempts to legalize it. We hear people at the end of life say: I'm not afraid to die—but I don't want to die in pain. I don't want to be a burden on my family. I don't want to lose control.

To address such fears, the MMA

is joining in a national effort spearheaded by the American Medical Association to improve end-of-life care by providing adequate pain medication, using hospice care, and making sure that patients' wishes for end-of-life care are clarified.

The MMA signed on to the Patient's Bill of Rights, unveiled at the recent AMA meeting in Chicago. We affirmed that patients in the last phase of life have these rights:

1. The opportunity to discuss and plan for end-of-life care;
2. Trustworthy assurance that physical and mental suffering will be relieved;
3. Trustworthy assurance that wishes for withholding or withdrawing life-sustaining intervention will be honored;
4. Trustworthy assurance that patients will not be abandoned by their physician;
5. Trustworthy assurance that, above all, dignity will be a priority;
6. Trustworthy assurance that burden to family and others will be minimized;
7. Careful attention to personal wishes and spiritual needs;
8. Trustworthy assurance that care providers will assist the bereaved through the early stages of mourning and adjustment.

Offering our patients these reassurances is important, but we must also be prepared to respond when our patients turn to us for compassionate care at the end of life. His-

torically, we physicians have focused on saving our patients' lives and have looked upon death as the enemy. Now the trend toward assisted suicide has alerted us the need to offer more help to our dying patients.

To ensure that physicians have the basic knowledge they need to care for patients at the end of life, the MMA is participating in a project entitled Education for Physicians on End-of-Life Care, or EPEC, which was initiated by the AMA and the Robert Wood Johnson Foundation. This ambitious two-year initiative is designed to improve the care of dying patients nationwide.

The EPEC curriculum will cover a range of topics, including palliative care, ethical decision-making, symptom management, communication skills, and psychosocial issues. The MMA Committee on Ethics and Medical-Legal Affairs will ask the Board of Trustees to support participation by several MMA physicians in an intensive regional conference on end-of-life issues so they can share information with their colleagues.

Since most of us didn't receive systematic training in the care of our dying patients, the EPEC program should be enormously helpful and should help us make sure our terminal patients experience a dignified death with comfort, quality, and peace. ■

ANTITOBACCO, cont. from page 33

tobacco consumption and the consequences of those changes;

- that the AMA continue to support further development of a comprehensive tobacco treatment "infrastructure," including the ready availability of cessation tools such as nicotine patches and nicotine medications;

MMA physicians also asked that another recommendation be added to the report. That resolution, part of the 1996 Minnesota delegation's original proposal, calls on the AMA to support a law requiring cigarette makers to label the contents of their products in easily understood language.

Hanson commended the committee for its "excellent" and "well-documented" report. He said it has been estimated that 70 to 80 percent of smokers want to quit, and reducing nicotine content to negligible levels—a goal that the report found is clearly feasible—would allow many of them to do so.

"This idea sounded outrageous when we first proposed it, but we knew there was science behind it," said Hanson, a pulmonologist and

president of the Smoke-Free 2000 Coalition. "Now the committee's report has demonstrated that."

The MMA also introduced a resolution calling for a "substantial portion" of any national tobacco settlement to be set aside to directly reduce tobacco use. Unfortunately, the resolution—which passed—was essentially rendered moot by the June 17 death of the McCain tobacco-control bill in the Senate (see "National Tobacco Bill Dead," right).

Minnesota's Edmund C. Burke, M.D., testified on behalf of the American Academy of Pediatrics in favor of a resolution beseeching the film industry to stop glamorizing cigarette smoking in movies. Although the recent Minnesota settlement bans payment to the entertainment industry for displaying cigarettes in movies, "apparently there are other ways to do end runs around this," said Minnesota delegate Carolyn McKay, M.D. That resolution also calls for comprehensive legislation to prevent tobacco companies from "targeting the youth of America with strategic marketing programs." ■

Dr. Jacott's Stint on AMA Board Ends

William E. Jacott, M.D., attended his final AMA Annual Meeting as an AMA board member in June. Jacott was lauded on the floor of the AMA House of Delegates for his nine years of dedicated service on the Board of Trustees. "Dr. Jacott has served the physicians of Minnesota well for the past 25 years," said A. Stuart Hanson, M.D., Minnesota delegation chair. "And for 18 of those years, he's served not only the physicians of Minnesota, but the physicians of the nation. He always does the homework, he always knows the issues, and he's extremely approachable and helpful."

In his farewell address to the House, Jacott said, "Serving the AMA Board of Trustees has been a great experience, a great honor. After nine years, it's time to move on." He thanked the Minnesota delegation, the North Central Medical Conference, and his AMA colleagues and staff. Jacott is head of the Department of Family Practice and Community Health at the University of Minnesota. He will serve in the AMA Section on Medical Schools starting in December, and is beginning a term as chair of the Joint Commission on Accreditation of Healthcare Organizations. ■

National Tobacco Bill Dead

Although antitobacco activists expressed disappointment about the death of the national tobacco bill June 17, many in the public health community shared the philosophical view expressed by A. Stuart Hanson, M.D.: "Better no bill than a bad bill."

Hanson, president of the Smoke-Free 2000 Coalition and chair of the Minnesota delegation to the AMA, was frustrated that the \$1.10-per-pack cigarette tax hike—and the research, education, and intervention programs it would have paid for—fell victim to a \$40 million advertising blitz by the tobacco industry. Two votes in the Senate effectively killed the measure; Sen. Paul Wellstone voted in favor of the bill both times, while Sen. Rod Grams opposed it both times. The bill was sponsored by Sen. John McCain, R-Arizona.

Hanson said that new legislation was not needed to give the Food and Drug Administration authority to regulate tobacco products. "We're pleased that we still have an FDA that can regulate tobacco; that has already been established." He added that the failure of Congress to enact national legislation doesn't prevent states from seeking justice on an individual basis, as Minnesota has done.

"The state suits and the [suits filed by] health plans will continue, and the industry will have to keep trying to defend itself," Hanson said.

E&M Guidelines Hot Topic at AMA Annual Meeting

The AMA House of Delegates debated resolutions on a broad range of issues affecting physicians and their patients:

E&M Documentation Guidelines

Twenty resolutions, a Board of Trustees report, and several hours' worth of lively discussion were devoted to the ongoing controversy surrounding E&M documentation guidelines. Ultimately, the HOD passed one lengthy and detailed substitute resolution encompassing the recommendations and concerns set forth in all the others.

The resolution addresses various issues related to fraud and abuse, including the need for physicians to be protected from sanctions due to differences in interpretation and/or inadvertent coding errors; opposition to the use of the medical record "as an accounting document"; opposition to requiring quantitative formulas or assigning numeric values to elements in the medical record; the need for simple, realistic, and clinically relevant guidelines; the need for adequate testing of revised

guidelines; and the need for educational efforts for physicians and staff about the guidelines once revisions are final.

Medicare 'User Fees'

Several resolutions addressed the inappropriateness of charging physicians to participate in the Medicare program. The Health Care Financing Administration's "user fee" proposals include a \$1 fee for each Medicare claim submitted on paper (as opposed to electronically); a \$1 fee for a duplicate or "unprocessible" claim; and enrollment (\$100) and reenrollment (\$25) charges for physicians and other providers. The Clinton administration also recently directed HCFA to delay Medicare payments to physicians. The HOD ended up passing Resolution 201, which incorporates the concerns outlined in seven other "user fee" resolutions. The resolution expresses strong opposition to the concept of user fees and to any slow-down in Medicare payments. It also decries the recent decision by the federal government to order Medicare con-

tractors to send fewer notices to beneficiaries, and to make greater use of telephone voice mail to answer calls from physicians inquiring about the status of unpaid claims.

The resolution strongly urges Congress to "appropriate sufficient funds to enable HCFA and its carriers to carry out their statutorily required functions." HCFA's operating budget has declined by 10 percent in the past four years.

Minnesota delegate Robert D. Christensen, M.D., asked for the AMA's help at the state level in fighting another example of an inappropriate "user fee" for physicians: Minnesota's provider tax. Language in Resolution 201 expresses strong AMA opposition to any attempt by the federal or state governments to impose " 'user fees,' 'provider taxes,' 'access fees,' or 'bed taxes' on physicians and other health care providers to subsidize or fund any health care program."

Alternate delegate Raymond G. Christensen, M.D., thanked the AMA for responding to Minnesota's request. "MMA physicians like to know that the AMA is supporting us as we work for a broad-based tax to replace the provider tax," he said.

Pain Control in Long-Term Care Settings

The AMA House of Delegates resolved to promulgate clinical practice guidelines for pain control in long-term care settings, to support education and research in pain management in long-term care, and to help fight federal and state regulatory barriers to adequate pain control for long-term care patients. Minnesota internist Eric G. Tangalos, M.D., representing the American Medical Directors Association, testified in favor of the resolution. Its adoption is consistent with the long-standing commitment and growing campaign, by both the MMA and the AMA, to improve end-of-life care. ■

AMA Task Force Chaired by Nelson Offers Draft Report

The American Medical Association's Ad Hoc Committee on Structure, Governance, and Operations, chaired by Minnesota physician Audrey M. Nelson, M.D., released a preliminary report at the Annual Meeting in June. The committee was formed in the wake of the widely detested Sunbeam arrangement to study the function and operation of the House of Delegates and Board of Trustees, with an eye toward making changes to "ensure propriety, efficiency, and accountability" in AMA programs and activities. The group has been working with an independent consulting firm to evaluate the AMA's internal decision-making processes, and will present a final, detailed report to the 1998 Interim Meeting in December. Watch future issues of *MMA News and Views* for coverage of the committee's findings.

NEWS DIGEST

*People and places
making medical news*



People & Places

Fairview Health System named **David R. Page** president and chief executive officer beginning July 1. Page, who was previously chief operating officer of Memorial Hermann Healthcare System in Houston, Texas, replaces **Richard Norling**, who left Fairview last fall. In Houston, Page directed the merger of a 624-bed specialized hospital with a health care system that included six community hospitals.

H.L. Saylor III, M.D., a general and vascular surgeon with Surgical Consultants, P.A., and a resident of Edina, has been elected to the board of **Fairview Southdale Hospital** in Edina.

Carolyn Cody, M.D., is a new member of the board of **Fairview-University Medical Center**, Minneapolis. Cody is a surgeon at Associates in General and Vascular Surgery, Ltd., and lives in Minneapolis.

The late **Samuel Schwartz, M.D.**, known for his work in pigment biochemistry and with the porphyrin molecule, was honored with an Outstanding Achievement Award from the University of Minnesota at the June 5 Medical School commencement ceremony. His wife, **Goldi Schwartz**, accepted the award. Dr. Schwartz's final work was the development of HemoQuant®, a test for blood in the stool.

In recognition of his distinguished lifetime service to children, **Norman Sterrie, M.D.**, received the

1998 Gold-Headed Cane Award from the University of Minnesota Department of Pediatrics. The award is the highest honor given by the department.

Blue Cross and Blue Shield of Minnesota announced its 1998-99 board trustees and officers following elections at its annual meeting April 29. Chief executive officer **Andrew Czajkowski** retains his seat on the board, and a new seat was created for **Mark Banks, M.D.**, president and chief operating officer. Elected for the first time to serve three-year terms were **Joel Haugen, M.D.**, a family practice physician with Dakota Clinic in Fargo; **Robbin S. Johnson**, corporate vice president of public affairs at Cargill, Inc., in Minnetonka; **Jonathon Killmer**, vice president and chief financial officer of Digi International, Eden Prairie; and **John Lettman**, president and chief executive officer of Malt-O-Meal Company in Minneapolis. **Mark Laub**, chief executive officer of EnPower Services, Inc., in Elk River, was elected chair of the boards of Blue Cross and Aware Integrated, Inc.

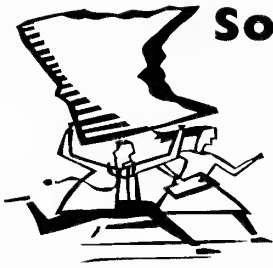
HealthSystem Minnesota's board of directors approved a new slate of officers that reduces its voting membership from 24 to 15. The new board includes 10 community members, four HealthSystem Minnesota physicians, and ex-officio non-voting member **James L. Reinertsen**,

M.D., HealthSystem Minnesota CEO. New to the board this year are **John A. Berg**, regional president of Norwest Corp.; **Edward Toth**, corporate vice president and controller of Cargill, Inc.; **Erol Uke, M.D.**, a Park Nicollet Clinic urologist; and **Linda Peitzman, M.D.**, associate medical director of HealthSystem Minnesota.

The **University of Minnesota Cancer Center** has joined an elite group of 56 facilities designated as National Cancer Institute research centers. The prestigious honor means that the university will receive \$5.4 million in federal grants during the next five years to support infrastructure and ongoing research. The designation will open treatment and research opportunities for patients and scientists and will help make the university a major player in the fight against cancer.

The only other such facility in Minnesota is at the Mayo Clinic in Rochester.

The new **Fairview Hiawatha Clinic** facility opened on the clinic's existing site at the corner of 38th Street and 42nd Avenue in the Longfellow neighborhood of Minneapolis. Medical director **Joel Thompson, M.D.**, notes that some of the clinic's physicians have provided health care to several generations of families at the location. A full-service retail pharmacy will open in August. ➡



Socioeconomics

UHC Plans to Buy Major Rival

Minnetonka-based United HealthCare said it plans to acquire Humana, Inc., a major rival based in Louisville, Kentucky. The \$5.5 billion stock deal would create the nation's largest managed care company. Humana, ranked eighth in enrollment among all plans in 1997, sells administrative services and memberships in HMOs, PPOs, and point-of-service plans. The combined company will have about \$27 billion in revenue and more than 10 million health plan members.

UHC Buys Contract Research Organization

United HealthCare's acquisition of a North Carolina-based company, InSite Clinical Trials, is apparently the first time a managed care company has bought a contract research organization. InSite, with 200 employees, specializes in identifying patients to participate in drug trials and reducing data collection time. It has also moved into the contract research business. United HealthCare spokesperson Kim Tucker said the move helps diversify the \$11.8 billion organization.

"United HealthCare is moving away from just being a managed care company to becoming a more diverse health care organization to provide a full range of products to

the health care industry," Tucker said in an article in the Minneapolis-based *City Business*.

Ramsey Will Handle Medical Care for Low-Income Residents

The Ramsey County Board voted June 9 to assume responsibility for the medical care of 45,000 low-income county residents. Beginning January 1, 2000, the county will negotiate health care benefits with insurers, a responsibility the state now handles for all counties. The state and federal governments will continue to pay for medical assistance for welfare recipients.

Supporters of the program say the shift in control will lead to better services for welfare clients. Opponents fear the plan will increase bureaucracy and could lead to property tax increases. About half of Minnesota's 87 counties are consid-

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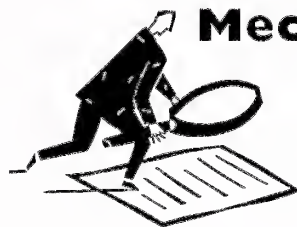
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ering county-based medical benefits purchasing.

Twin Cities Nurses Win Wage Increases

Wages for most Twin Cities registered nurses will increase about 8 percent during the next three years under a contract ratified in May by the **Minnesota Nurses Association**. Agreements with 13 Twin Cities area hospitals cover about 80 percent of registered nurses in the area.

The agreements call for a starting registered nurse to be paid \$17.40 an hour, or about \$36,000 a year. Nurses with 20 years' experience would make up to \$26.50 an hour—about \$55,000 annually—which would increase to about \$28 an hour by the end of the three-year contract. ■



Judge Dismisses Antitrust Lawsuit Against Allina

Allina Health System and several anesthesiologists won a legal victory in May when U.S. District Judge **Ann Montgomery** dismissed an antitrust lawsuit filed by the **Minnesota Association of Nurse Anesthetists (MANA)**. The association had alleged that dozens of anesthesiologists, Allina, and a St. Cloud hospital conspired to eliminate several nurse anesthetists' jobs.

In her ruling, Montgomery said

Medicine Law & Policy

that MANA failed to show that its members had been harmed by anti-trust activities and said that there was no evidence that the defendants had monopolized the anesthesia services market.

MANA announced in June that it has filed a new antitrust suit, this time in state court. "We were disappointed," MANA president-elect **Gayle McKay** told the Minneapolis-based *Star Tribune*. "We feel that there are issues that we raised that need to be addressed. We feel like we need to continue to push."

MANA is also still pursuing a whistleblower suit alleging that the same defendants defrauded Medicare by as much as \$1 billion by overbilling for anesthesia services. ■



Rates, Trends, Data

Adolescent Drug Treatment Admissions Rise 170%

Admissions of adolescents for chemical dependency treatment in Minnesota rose 170 percent in the past five years, according to the state Department of Human Services. In 1993, 2,003 people under age 18 were admitted to inpatient and outpatient treatment programs; the number jumped to 5,414 in 1997. The drug primarily responsible for the increase was marijuana, accounting for 68 percent of admissions.

Adult admissions were up 15 percent and still made up the majority of the 41,481 total admissions. Alcohol was the primary drug abused. The study is based on results from surveys the DHS conducts of the state's 375 licensed chemical dependency programs.

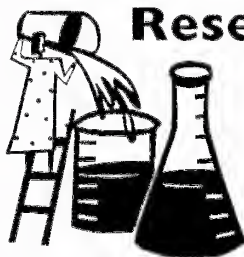
Heterosexual HIV Transmission Rises in Young Adults

Heterosexual transmission of HIV has increased sharply among Americans in their teens and early 20s. At the same time, levels of HIV infection are declining among people in their late 20s and older.

Researchers from the National Cancer Institute report that females aged 18 to 27 are far more likely to be infected with the virus than are older females. Among women aged

27 to 45 the chances of being HIV-positive are quite low, and only one in seven HIV cases in that age group is acquired heterosexually. In contrast, one of three 18- to 27-year-olds with HIV is female, and one-third of cases in that age group resulted from heterosexual contact.

The study, reported in the June 17 *JAMA*, also found that one of every 1,000 white women aged 23 to 27 is infected, compared with one of every 80 black women in that group. ■



Research & Innovations

Mayo Clinic to Study Xenotransplantation

Hoping to alleviate the shortage of organs available for transplantation, **Mayo Clinic** has announced plans

to raise genetically altered pigs to study the use of animal organs in humans.

Mayo is working with **Baxter Nextran** to genetically alter pig organs to make them more compatible with human immune systems. They also plan to study the use of animal cells and tissues. A Mayo Clinic statement said clinic scientists will study scientific issues related to cross-species transplantation, particularly its effect on the immune system. The

initial research will not involve experiments with people.

Mayo plans to open a new transplant center next year and to expand the children's transplantation unit.

Researchers Develop 'Smart Bomb' for Breast Cancer

Researchers led by Faith Uckun, M.D., Ph.D., director of the Hughes Institute in Roseville, Minnesota,

have developed a promising "smart bomb" that kills human breast cancer cells, including those resistant to chemotherapy. The drug, EGF-Genistein, binds to the epidermal growth factor (EGF) receptor on breast cancer cells and inactivates the cells' survival machinery—the EGF receptor and the tyrosine kinase enzymes associated with it—resulting in rapid cell death.

Studies showed that the soybean-derived drug kills human breast cancer tumors in mice and is safe in monkeys and other small animals. Results appeared in the May *Clinical Cancer Research*. Uckun plans to begin clinical trials of the drug on late-stage cancer patients this fall.

Personal Care Means More to Patients than Focus on Ethnicity

Personalized care is more desirable than culturally specific care, according to research in the May *Archives of Pediatric and Adolescent Medicine*. The researchers, including lead author Ann W. Garwick, Ph.D., of the University of Minnesota, studied African-American, Hispanic, and European-American families to identify recommendations for improving the care of children with chronic conditions. They found no distinctive differences in families' recommendations based on ethnicity. Instead, the families stressed the importance of individualized care. Most suggestions focused on improving the availability and accessibility of health care services. ■

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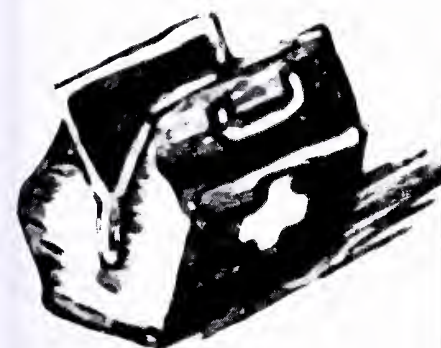
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Examples:

1. Benson RC Jr. Laser photodynamic therapy for bladder cancer. *Mayo Clinic Proc* 1986;61:859-64.
2. Guttormson NL, Bubrick MP. Mortality from ischemic colitis. *Dis Colon & Rectum*, to be published.
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Public Health and Medicine

Changing Roles and Relationships

As patients on medical assistance move into managed care health plans, public health departments and physicians face new expectations and roles.

Larry Sundberg, M.P.H., M.B.A.

Editor's Note: *Managed care has affected every aspect of health care. The Minnesota health care reform legislation of the early 1990s required managed care organizations to be responsible for the public health needs of their members and to work with local public health services. In some areas, the collaborations are working well, in others they are only beginning.*

With a view to likely changes in health care delivery, public health visionaries have defined three core functions for public health: assessment, policy development, and assurance of services. Like all public health functions, these cannot be carried out without the support and cooperation of physicians in all types of practice.

—Barbara Yawn, M.D., M.Sc.,
Series Editor

The job of public health is much more than just providing health care to disadvantaged patients. While medicine focuses on caring for individuals, public health works with populations or communities. When public health departments do provide direct services to individuals, it is usually because they are part of a special or target population. Public health is concerned with shaping the conditions—environmental, societal, and behavioral—that determine the health of a community. Emphasizing health promotion, prevention, and early detection and treatment, the public health community tries to foster conditions that lead to healthier living.

Unlike medicine, public health is not defined by who does it. Environmental protection agencies, agriculture departments, nonprofit organizations such as the American Cancer Society and MADD, free clinics, schools, neighborhood advocacy groups, and social services agencies all serve the public health.

Two models are commonly used to describe public health activities: the three core functions advanced by the Institute of Medicine¹ and the 10 essential services described in 1994 by the National Public Health Functions Steering Committee (see the table, page 44). Both models are weak in describing the environmental safety element

of public health, but I use the core functions model—assessment, policy development, and assurance of services—as the basis for this article.

ASSESSMENT

Assessment refers to surveillance, data collection, and analysis of a population's health status, health needs, disease threats or risk factors, and health services. Careful assessment reveals unrecognized problems or disparities, quantifies risk and health status, and establishes trends. Significant public health resources are used to assess individual members of a particular population. For example, when a physician identifies a child with an elevated blood lead level, public health workers visit the child's home to look for sources of lead exposure. The assessment includes testing for lead in household dust, the water supply, flaking paint, and soil; looking to see if a household member's work or hobbies may result in lead exposure; and examining the child's diet. After the assessment, measures such as lead abatement orders are implemented to reduce the child's exposure to lead. The child is considered part of a population at increased risk of adverse health outcomes from continuing environmental exposure to lead.

Assessment is the foundation of effective, targeted-population health interventions. Epidemiological examination of cases of vaccine-preventable diseases, for example, led to changes in the recommended timing of childhood immunizations, the addition of a booster dose for MMR vaccine, and a call for universal immunization against hepatitis B. In Minnesota, 1992-93 assessment of immunization rates in kindergartners found that only 46% were up to date on all their immunizations at age 20 months.² Subsequent surveys of parents and medical providers identified specific barriers to immunizing children on time, and local partnerships are now using those findings to eliminate the barriers.

Minnesota's overall health status measures tend to be very good compared with national averages. But averages based on the entire population hide much poorer health status levels among our relatively small minority

Table

Two classification schemes for public health activities**Core functions**

1. Assessment
2. Policy development
3. Assurance of services

Essential public health services

1. Monitor health status to identify community health problems.
2. Diagnose and investigate health problems and health hazards in the community.
3. Inform, educate, and empower people about health issues.
4. Mobilize community partnerships to identify and solve health problems.
5. Develop policies and plans that support individual and community health efforts.
6. Enforce laws and regulations that protect quality health and ensure safety.
7. Link people to needed personal health services and assure the provision of health care when otherwise unavailable.
8. Assure a competent public health and personal health care workforce.
9. Evaluate effectiveness, accessibility, and quality of personal and population-based health services.
10. Research for new insights and innovative solutions to health problems.

populations. By being aware of the disparities, we can develop health strategies geared to specific groups.

POLICY DEVELOPMENT

The policy development function of public health covers everything from establishing community health goals to mobilizing community resources, addressing specific health problems, and enacting health-related laws and regulations. The Minnesota Department of Health has brought together representatives from 40 organizations in the Minnesota Health Improvement Partnership to update Minnesota's public health goals and objectives, a project now in process. The Minnesota Community Health Services planning process establishes local health goals and objectives. Grassroots organizations and initiatives, including the MMA's violence prevention campaign, also play an important role in policy development.

A recent health-related law is the Tuberculosis Health Threat Act, which allows the Health Department to deal with persons with infectious tuberculosis who fail to take sufficient action to avoid exposing others to infection.³

ASSURANCE

The assurance function of public health is part watchdog, part report card, part public accountability. Public health departments determine that those with health needs receive quality medical, health, and human services and connect individuals to appropriate services. For example, health departments identify and screen contacts to an infectious tuberculosis case, help uninsured women receive breast and cervical cancer screening, enroll families for child-teen checkups, and work with medical providers to remove potential barriers to their providing those checkups. Public health departments also assure that communities can respond adequately to such emergencies as unanticipated diseases, conditions, and events threatening the community health. The assessment function of public health particularly affects medical providers through government monitoring of the quality of care provided to different populations.

CHANGES IN PUBLIC HEALTH

Major changes are occurring in the public health field. Most obviously, people who receive government medical assistance are moving into managed care plans. Until recently, public health departments focused much of their attention on providing medical care to members of underserved populations—often to the detriment of other public health responsibilities. As these people are shifted into managed care systems, health departments are losing a major source of revenue that funded a significant portion of their other activities. Many already had a limited funding base and are finding it difficult to replace the lost income. It is estimated that at most only 5% of health-related dollars are spent on public health.⁴

On the positive side, with a reduced role in direct patient care, health departments can strengthen their focus on community-based approaches to health promotion. In particular, we can expect to see a much greater emphasis on data collection and analysis, which will enable health departments to better support the planning and program development efforts of other health-related entities, such as health collaboratives, family resource centers, community cancer prevention organizations, and clinic immunization programs.

IMPACT ON PHYSICIANS

What do these changes portend for physicians and other health care providers? As patients move into managed care systems, funds for their care will be limited—but, at the same time, their health status is expected to improve. The common expectation is that this will lead health care providers to devote greater attention to prevention and early detection as a means of controlling costs.

Health care systems will be expected to take greater responsibility for the health of groups of people. They will be judged less on individual outcomes than on how

For more information about public health, see these websites:

American Public Health Association:
www.apha.org

National Institutes of Health:
www.nih.gov

Centers for Disease Control and Prevention:
www.cdc.gov

UT-Houston School of Public Health:
www.sph.uth.tmc.edu

well they manage the health of specific populations. Health care providers will be expected to reduce health status disparities within their client populations. Of particular concern will be care for the populations formerly served by public health departments. Physicians will experience much greater public scrutiny. They will be asked to provide improved documentation of patient health status and problems, quality of service delivery, and evaluation of outcomes.

A much different approach to care delivery will be required for disadvantaged and high-risk populations. Many of these people experience life problems—substance abuse, mental illness, homelessness, abusive or unstable home environments, lack of transportation, and language and cultural barriers—that make it difficult for them to access health care providers and adhere to treatment plans. These individuals will not be served if we wait for them to seek medical care at the appropriate time. Strong, targeted outreach efforts will be needed. For example, culturally sensitive staff and materials may be needed to reach and serve populations of different cultural backgrounds. Health providers must work with a variety of organizations, such as housing organizations, social services agencies, volunteer transportation services, and food banks, to ensure that individuals' nonmedical problems are addressed so that the medical care can be effective—a process that is called "wrap-around service." Usually, the local health department is a key partner in assisting with outreach activities and wrap-around services.

Physicians will be expected to pay greater attention to prevention and early detection of disease, which means helping patients make behavioral changes, since lifestyle plays a leading role in health problems and advice from personal physicians has a significant effect on reducing clients' health risk behaviors.

With this shift toward prevention, community factors are likely to influence physicians' ability to provide effective care to their patients. A more holistic approach to patient care will be needed. Health care professionals have tended to take a problem-specific approach instead of addressing the full, integrated constellation of societal conditions and behavior choices that lead to positive health outcomes. By adopting a holistic approach, phy-

sicians will become more actively involved with public health in establishing health goals and interventions for their communities.

MM

Larry Sundberg is an epidemiologist in the St. Louis County Department of Health and Long-Term Medical Care.

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The Proposed Stark II Regulations

What Physicians Should Know

To avoid fines and prosecution, it is imperative that physicians know if and when the proposed Stark II regulations apply to their referral activities.

Barbara E. Tretheway, J.D., and Jaye L. Martin, J.D.

Almost every practicing physician has heard the word "Stark" uttered by an attorney, a consultant, a competitor, a hospital, or a practice administrator. For those who do not know, Stark is a federal law that imposes limitations on physicians' referrals. Given the broad scope of the law, physicians should know if and when Stark is applicable to their referral activities. The Stark penalties are significant, and failure to understand what is prohibited is no defense. The law is extremely complex in its application, and it became more so with the recent issuance of proposed Stark II regulations. While the proposed regulations clarify certain activities, they also call into question what were believed to be settled principles under the original regulations.

BACKGROUND

In response to studies conducted in the late 1980s indicating that Medicare patients received significantly more laboratory services if their physician owned a clinical laboratory, Congress enacted the "Ethics in Patient Referral Act of 1989." This act, frequently called Stark I, generally prohibits a physician from making a referral to a clinical laboratory in which the physician (or an immediate family member) has a financial interest. Stark I further prohibits the clinical laboratory from presenting a claim to Medicare for services furnished under a prohibited referral. In addition, it requires the lab to refund

any amount collected for services furnished under a prohibited referral. The statute includes a number of exceptions to the prohibitions that, if satisfied, allow a referral.

In 1993 and 1994, Congress extensively revised Stark I by applying the prohibitions to 10 additional designated health services (DHS). In addition, it broadened the prohibition to include the Medicaid program. The revised statute is referred to as Stark II.

In August 1995, the U.S. Health Care Financing Administration (HCFA) issued final regulations interpreting Stark I. On January 9, 1998, HCFA issued proposed regulations relating to Stark II.

This article discusses the proposed Stark II regulations and identifies areas in which physicians should review their current business relationships to ensure compliance with the law.

THE GENERAL PROHIBITION

As noted above, Stark prohibits a physician from referring patients for DHS to an entity in which the physician or an immediate family member has a financial interest.

For these purposes, *referral* means either of the following:

- a physician's request or order for, or certification or recertification of the need for, any DHS for which payment may be made under Medicare Part B or Medicaid, including a request for a consultation with another physician or any test or procedure

that that physician may order or perform; or

- a physician's request that includes the provision of any other DHS, the establishment of a plan of care that includes a DHS, or certification or recertification of the need for a DHS.

The definition of referral is broad. Physicians make a referral when they ask for a service in any way, including when they refer to themselves or another member of their practice. Prohibited referrals include those to such entities as skilled nursing facilities that in turn purchase DHS under a contract with an entity owned by the physician. The statute does not prohibit a physician from making a referral for non-DHS or from being compensated for making such a referral.

Entity means a physician's solo practice or group practice or any other sole proprietorship, trust, corporation, partnership, foundation, not-for-profit corporation, or unincorporated association. This definition encompasses any entity that provides DHS.

Immediate family member means any of the following:

- spouse;
- parents (natural, adoptive, step, or in-law);
- children (natural, adoptive, step, or in-law);
- siblings (whole, step, or in-law); and
- grandparents, children, and spouses of grandparents or children.

EXCEPTIONS

There are three types of exceptions under Stark: 1) exceptions that apply to both ownership and compensation arrangements, 2) exceptions that apply only to ownership interests, and 3) exceptions that apply only to compensation arrangements. Each exception listed below includes a number of specific requirements that must be met for the exception to apply. Failure to meet each requirement of an exception means that the exception will not apply and referrals will continue to be prohibited.

Exceptions to the ownership and compensation arrangement prohibitions of Stark:

1. physician's services when a physician refers to a member of the same legitimate group practice;
2. certain in-office ancillary services furnished by solo practitioners and group practices;
3. services provided to prepaid health plan enrollees; and
4. services furnished under certain payment arrangements for ambulatory surgical centers, end-stage renal dialysis, and hospice (a new proposed exception).

Exceptions relating solely to the ownership or investment prohibition:

1. ownership in publicly traded securities and mutual funds;
2. ownership interests in Puerto Rican hospitals;
3. ownership interests by rural providers; and
4. hospital ownership.

Exceptions relating solely to the compensation arrangement prohibition:

1. rental of office space;
2. rental of equipment;
3. bona fide employment relationships;
4. personal service arrangements;
5. remuneration from a hospital unrelated to the provision of a DHS;
6. physician recruitment;
7. isolated transactions;
8. certain group practice arrangements with a hospital (limited to arrangements that have been in effect continuously since December 19, 1989);
9. payments by a physician for items and services;
10. fair market value compensation (new);
11. "de minimis" compensation (new); and
12. certain discounts (new).

A *financial relationship* means a direct or indirect ownership or investment interest (including an option or nonvested interest) in any entity or a compensation relationship with an entity. Ownership interests may exist through equity, debt, or other means and include any indirect interest no matter how many levels removed from a direct interest. The Stark statute was intended to prevent physicians from evading the law by establishing hold-

ing companies for entities that provide DHS.

Compensation relationship means any arrangement involving remuneration, direct or indirect, between a physician (or an immediate family member) and an entity. Remuneration means any payment, discount, forgiveness of debt, or other benefit made directly or indirectly, overtly or covertly, in cash or in kind.

Designated health services are:

- 1) clinical laboratory services;

- 2) physical therapy services; 3) occupational therapy services; 4) radiology services and supplies; 5) radiation therapy services and supplies; 6) durable medical equipment and supplies; 7) parenteral and internal nutrients, equipment, and supplies; 8) prosthetics, orthotic and prosthetic devices, and supplies; 9) home health services; 10) outpatient prescription drugs; and 11) inpatient and outpatient hospital services. DHS are subject to the referral prohibition regardless of how the service is billed.

THE EXCEPTIONS

Once it is clear that a physician or physician group has a financial interest in an entity, and the physician will make DHS referrals to that entity, the exceptions under Stark become critical. Each exception contains a number of requirements that must be satisfied before the exception will apply. Exceptions are highlighted in the sidebar.

SOME BASIC POINTS

1. OWNERSHIP INTERESTS WILL BE IMPUTED THROUGH UNLIMITED LEVELS.

As noted above, a financial relationship may exist through an indirect ownership interest. That includes an interest in an entity that holds an ownership or investment interest in another entity providing a DHS. HCFA has made it quite clear that it will analyze ownership interests through an unlimited number of levels. Thus, a physician owning an interest in Company A, which in turn owns Company B, will be deemed to have an ownership interest in Company B. Physician referrals to Company B will be prohibited unless protected by an exception.

As a result, physicians (and immediate family members) making any investment in a business will need to know what that business owns to avoid inadvertent violations of the law.

2. LOANING MONEY TO AN ENTITY AND SECURING THAT LOAN WITH THE ENTITY'S ASSETS IS AN OWNERSHIP INTEREST.

An ownership interest under Stark may be through equity (i.e., stock) or

debt (loaning of funds). Any time a physician (or immediate family member) loans money (or other valuable consideration) to an entity and the debt is secured by the entity or its assets, the physician has a financial interest in that entity and referrals will be prohibited unless otherwise excepted. Other debt arrangements that will trigger an ownership interest are 1) physician-creditor participation in revenues or profits; 2) subordinated payment terms; 3) low or no-interest loans; and 4) ownership of convertible debentures (bonds that can be converted into stock).

Unsecured and nonconvertible loans and loans with no ownership interests are not ownership interests. In addition, a loan from an entity to a physician is not an ownership interest. These types of loans may, however, be treated as compensation relationships, for which there must be an applicable exception.

Thus, whenever a physician loans money to a DHS provider, a Stark analysis should be undertaken.

3. MEMBERSHIP IN A NONPROFIT CORPORATION, EVEN IF COUPLED WITH A POSITION ON THE GOVERNING BODY OF THE NONPROFIT, IS NOT AN OWNERSHIP INTEREST.

Physicians are often asked to sit on governing boards of the nonprofit, tax-exempt institutions dominating Minnesota's health care industry. HCFA has clarified that membership in a nonprofit, tax-exempt health care entity is not an ownership interest. Although this point was not controversial before the proposed regulations, most health care practitioners appreciate the clarification.

4. INDIRECT COMPENSATION RELATIONSHIPS TRIGGER THE REFERRAL PROHIBITION.

Stark applies to both direct and indirect financial relationships. The proposed regulations define indirect compensation as any payment that passes from a DHS entity to a physician, no matter how many intervening levels the payment passes through or how often it changes form. HCFA gives the example of a nonprofit research entity that awards a research grant

to a physician. The research entity is controlled by an individual who also owns a clinical laboratory and the grant is conditioned on the physician's agreeing to make referrals to the laboratory. Thus, an indirect compensation relationship exists between the laboratory and the physician.

5. THE RULES MAY CHANGE FOR PHYSICIAN GROUPS TRYING TO MEET THE STARK DEFINITION OF 'GROUP PRACTICE.'

The key exception for a typical professional corporation providing DHS is the in-office ancillary exception, which applies to both compensation and ownership relationships. To qualify for this exception, a physician group must first be a "group practice" under Stark. Proposed Stark II regulations would make the following changes to this exception:

- A group may include as members physicians who are individually incorporated as professional corporations. Thus, a partnership of professional corporations will be a group practice.

- Members of the group no longer include independent contractors. This change is very important for primary care clinics that wish to bring in part-time specialists to staff specialty clinics. Before this clarification, a primary care clinic that used a significant number of independent contractors frequently could not meet the requirements of the group practice definition.

- To determine if all of the members' patient care services are furnished through the group practice, administrative and training tasks that benefit the group would be included in addition to direct patient treatment.

- A group may bill under more than one provider number so long as each number has been assigned to the group.

- HCFA may require that overhead expenses and income be distributed according to a method that demonstrates centralized decision-making and a pooling of expenses and revenues. Perhaps most controversial, income and expenses cannot be distributed to satellite offices as if

each were a separate enterprise. This provision will be problematic for geographically dispersed practices or multispecialty groups that distribute profits based on geographic location or specialty area.

6. THE SUPERVISION, LOCATION, AND BILLING REQUIREMENTS FOR THE IN-OFFICE ANCILLARY SERVICES EXCEPTION MAY CHANGE.

Once a group is a Stark group practice, it must meet a second set of requirements before the in-office ancillary exception will apply. Possible changes to the requirements include:

- When an ancillary provider treats patients under the supervision of a member of the group practice, the supervising physician must be in the same office suite and immediately available. Office suite may be defined as a series of contiguous rooms or rooms on adjoining floors in certain circumstances. The point is, the supervising physician cannot be absent when providing direct supervision.

- The regulations clarify that under the site-of-service requirement, the item or service must be furnished in the physician's office. This does not include items given to a patient that are meant for home use or use outside the office, or any item that is delivered to the patient's home.

- If services are provided in the same building, as opposed to a centralized off-site location, the building must be one physical structure with one address, not multiple structures connected by tunnels or walkways.

- Group practices using a centralized off-site location for the provision of in-office ancillary services may have more than one centralized location as long as each location services more than one of the group's offices and each location furnishes one or any combination of designated health services.

7. PRODUCTION-BASED BONUSES AND COMPENSATION MUST BE REEXAMINED.

Production-based bonuses and compensation are permitted both under the group practice definition and under the employee exception. Before

January 9, 1998, this was believed to permit payment for any services personally performed by the physician. However, the proposed Stark II regulations preclude production-based payments (e.g., a percentage of receivables) based on DHS provided to patients referred by the physician even when the physician personally performs the service(s). In addition, employee productivity bonuses may not include any credit for directly supervising "incident to" services. These new limitations call into question existing production-based compensation models that include all services personally performed or directly supervised by a physician.

8. NEW EXCEPTIONS OFFER INCREASED OPPORTUNITIES TO ASSURE COMPLIANCE.

Perhaps the most positive additions in the proposed regulations are two new exceptions. Previously, the exceptions covered the provision of physician services only. The new exception for fair market value compensation would cover any compensation arrangement that 1) is in writing; 2) covers all the items or services to be provided or cross-references other agreements; 3) specifies a time frame; 4) specifies the compensation that is set in advance, consistent with fair market value, and is not based on the volume or value of referrals; 5) is commercially reasonable; and 6) complies with the anti-kickback statute. This exception could protect situations in which an entity purchases items from a physician or physician group.

The other new exception covers "*de minimis*" compensation. This exception appears to be somewhat limited. Examples include compensation in the form of items or services that do not exceed \$50 per gift or an aggregate of \$300 per year if the compensation is made available to all similarly situated individuals regardless of whether they make referrals and the compensation is not determined in a manner that takes referrals into account. This exception could protect situations in which a physician receives free samples, free training, or free coffee mugs or other items.

9. HOSPITAL OWNERSHIP IS STILL PERMITTED.

A physician who has an ownership interest in an entire hospital (not just a distinct part or department) may make referrals to the hospital for DHS if the physician is authorized to perform services at the hospital. The proposed regulations specifically include acute-care hospitals, psychiatric hospitals, and rural primary care hospitals. The exception applies to an ownership interest in a chain of hospitals so long as the physician is authorized to perform services at the hospital to which he or she refers. Services provided by separately licensed facilities, even if owned by the hospital or parent company or under arrangements with a hospital, do not qualify under this exception.

10. 'PER CLICK' EQUIPMENT LEASE ARRANGEMENTS ARE PERMITTED, BUT CAPITAL LEASES ARE CALLED INTO QUESTION.

A payment under a lease or rental arrangement can constitute a compensation relationship with an entity, therefore prohibiting referrals. Under the Stark I regulations it was unclear whether per-use arrangements met the requirement that the rental charge be set in advance, consistent with fair market value, and not based on the volume or value of any referrals or other business generated between the parties. The proposed Stark II regulations state that a physician may rent equipment to another entity under a "per click" payment arrangement and still make referrals to the entity if all the other requirements of the exception are met. The rental payment, however, may not include per-use payments for patients who are referred for the service by the leasing physician.

The proposed regulations also state that the lease exception does not apply to capital leases (because such arrangements reflect an ownership interest). Those arrangements must be covered under a different exception to avoid triggering the self-referral prohibition.

11. HCFA IS STRUGGLING TO CLARIFY THE SCOPE OF THE PERSONAL SERVICES ARRANGEMENT EXCEPTION.

The personal services arrangement exception under Stark I was ambiguous. This exception applies to payments made to a physician or physician group under an agreement that is in writing, has a term of at least one year, and meets other specific requirements. It has been unclear what entities are covered by this exception and what type of services are included.

The new regulations resolve some of this ambiguity. Under the proposed regulations, an agreement may cover services provided by a physician or an immediate family member or by others employed by the physician or family member, and the agreement may be with a physician, family member, or physician group. Multiple agreements may be in place with a single entity so long as each agreement references the other agreements. Finally, the arrangement may include services of any kind performed individually for an entity, but it may not include items or equipment.

This exception, however, requires that the compensation be set in advance, reflect fair market value, and not be based on the volume or value of referrals or other business generated between the parties. The proposed regulations do not adequately address when compensation is related to the volume or value of referrals and, as a result, this issue is perhaps the most complex aspect of the proposed regulations.

12. APPROPRIATE VALUATION IS CRITICAL UNDER THE RENTAL OF OFFICE SPACE ARRANGEMENTS EXCEPTION.

Physicians and physician groups must be alert when renting to or from an entity that provides DHS. Determining fair market value is critical to compliance with this exception, and the proposed regulations state that fair market value is the price that an asset or service would bring as the result of bona fide bargaining between well-informed parties as of the date the lease amount is agreed upon. Space rentals must reflect the value

for general commercial purposes and may not take into account the intended use. In addition, if the lessor is a potential source of referrals, the value may not be adjusted to reflect additional value based on proximity or convenience to the lessor. As with equipment leases, subleases do not fit under this exception but may be permitted under the new fair market value compensation exception. "Good cause" termination provisions will not be viewed as inconsistent with the requirement that leases have a term of at least one year so long as the lease is not renewed in the one-year period.

SUMMARY

Although the proposed regulations do not yet have the force and effect of law and HCFA is still seeking input in a variety of substantive areas, the regulations as proposed reflect HCFA's current view of enforcement of Stark II. Although simply comply-

ing with the statutory language and the Stark I regulations may be enough to avoid scrutiny until the proposed regulations are promulgated in final form, this approach may set physicians and physician groups up for significant disruption in their relationships in the future, particularly when proposed regulations have called certain practices into question. Clearly, every relationship between a physician (and his or her physician group) and any entity that provides DHS should be reexamined in light of the proposed regulations. In addition, arrangements under negotiation should be structured with the proposed new requirements in mind.

MM

Barbara Tretheway is vice chair of Gray Plant Mooty's Nonprofit Organizations and Health & Human Services Practice Group. Jaye Martin is an associate in that practice group.

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* New England Journal of Medicine, February 1991

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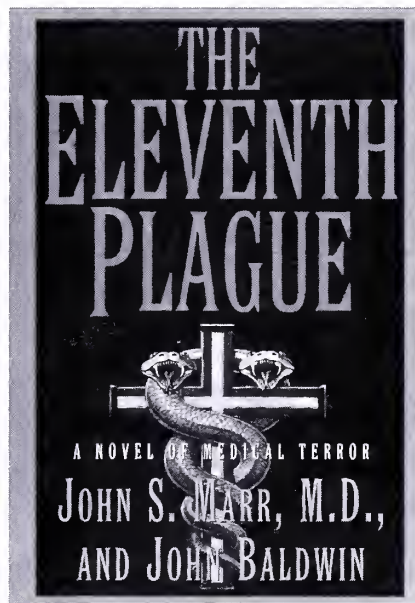
The Thrill of the Threat

Biological terrorism makes for good reading, in two thrillers and a nonfiction work about the latest, hottest menace threatening the world.

Reviewed by Charles R. Meyer, M.D.

Fear, like fashion, runs in fads measured by the media. First it's the 6 o'clock news, then the covers of *Time* and *Newsweek*, then a flurry of books. Communism, the Mafia, Russian spies, nuclear terrorism, and AIDS have had their runs. The latest is bioterrorism and biological warfare. The topic gains an unusual distinction with the publication of "Eleventh Plague: The Politics of Biological and Chemical Warfare" by Leonard A. Cole (W.H. Freeman & Co., 1996) and "The Eleventh Plague: A Novel of Medical Terror" by John Marr, M.D., and John Baldwin (Cliff Street Books, 1998). Rarely have two books, one fiction, one nonfiction, appeared almost concurrently with the same title. Thanks in part to Saddam Hussein and the Gulf War, biological warfare is hot—in addition to the two Eleventh Plagues, "Hot Zone" author Richard Preston weighs in with his recent thriller, "The Cobra Event."

The "eleventh plague" concept derives from the Biblical story of the 10 plagues of Egypt. For Leonard Cole, a Ph.D. and authority on science and public policy at Rutgers University, biological warfare may be the final plague (see the commentary by Cole, page 10). In journalistic style, he chronicles past experiments with biological weapons in the United States and present activities in Iraq. He describes Pacific and Utah tests that seemed harmless at the time but foolish now. Early ignorance of



the danger of biological weapons gave way to ignoring the real threats. Finally, the Gulf War and a Japanese cult's release of sarin nerve gas into a Tokyo subway roused the international community from its indifference. Now, two years after the publication of Cole's book, the facts of these bioweapons sagas are still being told as newspapers cover the U.N. inspections of Iraq and the Japanese terrorists' testimony.

Like most good fiction, "The Eleventh Plague: A Novel of Medical Terror" starts with fact. The diseases spread by Baldwin and Marr's bioterrorist all exist and are described accurately. Nobel-prize geneticist Joshua Lederberg is quoted early in

the story about the ominous threat of untamed bacteria. From there, the authors add the building blocks of a thriller: child victims; a brilliant, iconoclastic hero; fumbling government agencies; and a deranged, ingenious villain. The hero-investigator pieces together the microbiological puzzle while dodging missiles from his inept allies and the bioterrorist. The story's climax happens in New York City, with most of Gotham's millions threatened by the final "plague."

The making of the novel was also a strange mixture of fact and fantasy. "The Eleventh Plague" sprouted from a curious collaboration between a carpenter-turned writer, John Baldwin, a former epidemiologist and HMO medical director, John S. Marr, M.D., and a literary agent, John Boswell (dubbed "three guys named John" in a *New York Times Magazine* article). Like a master cabinet-maker, Baldwin methodically studied the structure of thrillers and formulated 10 "rules" for constructing a bestseller. His search for a suitable subject ended when he read an article Marr published in the journal *Caduceus* about the 10 plagues of Egypt. In a climax worthy of Hitchcock, the jointly written manuscript by these two unknown authors produced a frenzy of publisher bidding. After the ministrations of a book doctor, the thriller hit the bestseller list.

Fact also lies at the core of Richard Preston's novel, "The Cobra Event." Just as Preston relied on real

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outbreaks of Ebola virus as the basis for "The Hot Zone," in "The Cobra Event," he incorporates the skeleton of his nonfiction *New Yorker* article about Russian efforts to develop biological weapons. As in Baldwin and Marr's "The Eleventh Plague," in "The Cobra Event" a sudden, horrendous disease strikes innocent victims, mostly in New York City. "The Cobra Event" also features a psychotic terrorist and a gifted but unconventional heroine. Unlike the diseases of the fictional "Eleventh Plague," Preston's plague is a designer illness, the product of corporate genetic engineering. The plot works, but Preston gets mired in details of gory autopsies and laboratory procedures.

Both novels urge caution about genetic engineering practiced by amoral scientists. They also raise questions about the peculiar vulnerability of a megalopolis like New York City. The recent arrest in Nevada of two men charged with illegal possession of anthrax suggests that bioterrorism is not just a novelist's

fantasy. Leonard Cole suggests that no significant bioterrorist threat has occurred yet because potential terrorists are unfamiliar with biologicals, fearful of alienating supporters, and concerned about massive retaliation. Many of these obstacles could change, however.

We've not heard the last of Iraq and anthrax, and we've not likely seen the last of fictional, crazed bioterrorists stalking the subways of NYC—elements of a good read, if you maintain perspective. **MM**

Charles Meyer is editor-in-chief of Minnesota Medicine and an internist with Consultants-Internal Medicine in Minneapolis.

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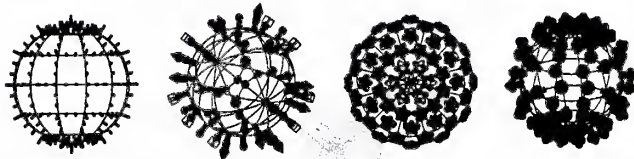
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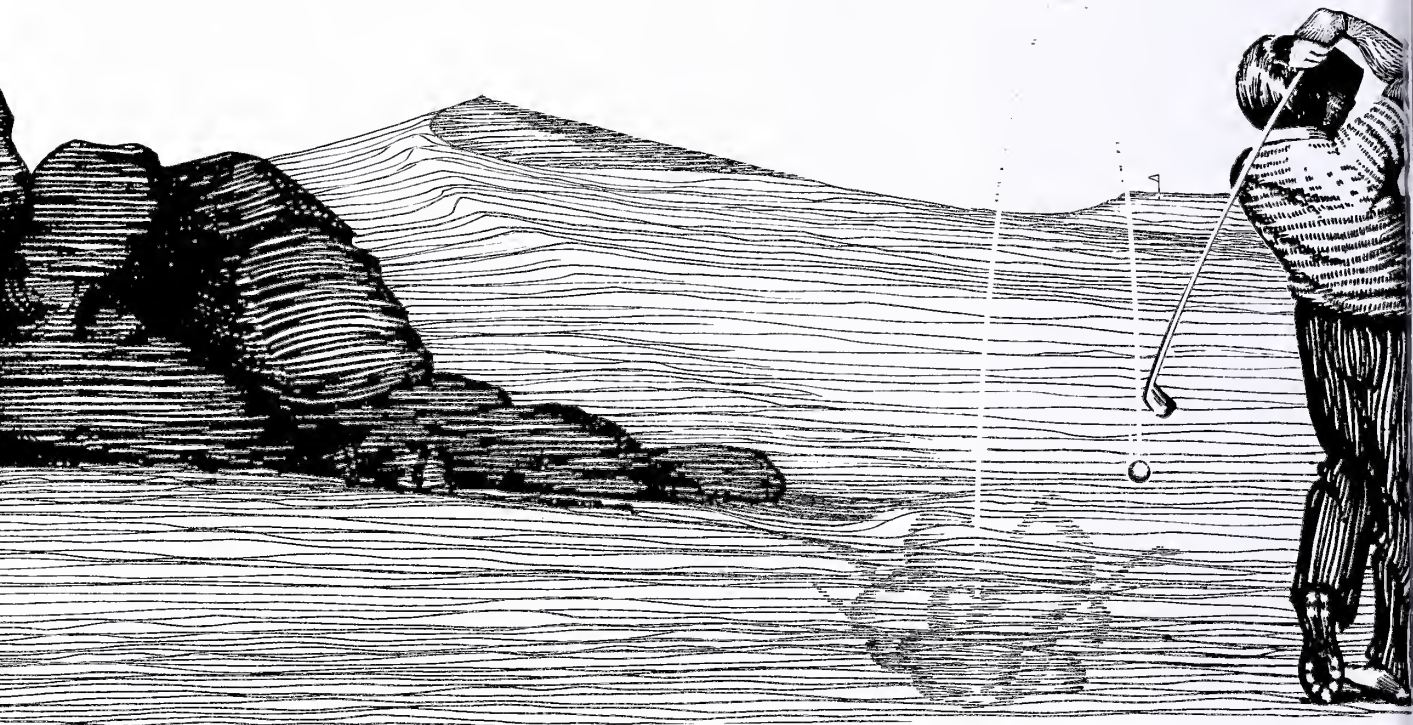
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POISON TABOO

(continued from page 11)

weapons. It lists chemicals that signatory nations must declare to have in their possession. Unlike the Biological Weapons Convention, the chemical treaty has extensive provisions to verify compliance, including short-notice inspections of suspected violations. It also provides added inducements to join through information exchanges and commercial privileges among the signatories.

In 1993 the chemical treaty was opened for signature. By October 1996, the pact had been signed by 160 countries and ratified by 64, one less than the number required for the agreement to enter into force. One disappointing holdout is the United States. In part because of disagreements over the treaty's verification provisions, the U.S. Senate recently delayed a vote on the pact.

Implementing this chemical weapons treaty should add momentum to the current negotiations over

strengthening the Biological Weapons Convention. Conversely, failure of the Chemical Weapons Convention to fulfill expectations will dampen prospects for a verification regime for the biological treaty. The most likely consequence would be the continued proliferation of chemical and biological arsenals around the world. The longer these weapons persist, the more their sense of illegitimacy erodes, and the more likely they will be used—by armies and by terrorists.

As analysts have noted, subnational groups commonly use the types of weapons that are in national arsenals. The absence of biological and chemical weapons from national military inventories may diminish their attractiveness to terrorists. According to terrorism expert Brian M. Jenkins, leaders of Aum Shinrikyo, the cult responsible for the sarin attack in Tokyo, indicated that their interest in chemical weapons was inspired by Iraq's use of chemicals during its war with Iran.

Treaties, verification regimes, global surveillance, controlled ex-

changes of pathogens—all are the muscle of arms control. Their effectiveness ultimately depends on the moral backbone that supports them and the will to enforce them rigorously. By underscoring the moral sense behind the formal exclusion of biological weapons, sustaining their prohibition becomes more likely. **MM**

Leonard Cole, a practicing dentist, is also an adjunct professor of political science and an associate in the program in science, technology, and society at Rutgers University in Newark, New Jersey. He is an authority in the area of science and public policy, with special expertise in policy concerning biological and chemical warfare, radon, and various health issues.

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Provided through the MMA Committee on Accreditation and CME. For assistance with scheduling meetings or for information on future medical meetings and CME courses, please contact the MMA office: 3433 Broadway Street NE, Suite 300, Minneapolis, Minnesota 55413-1761; 612/378-1875. For a complete listing of our calendar, visit the MMA home page at www.mnmed.org. Information for each entry is arranged by date; name of program; primary sponsor; location; contact person.

JULY 1998

July 16-18 **Management Strategies in Hematologic Oncology** Mayo Medical Laboratories; Ihilani Resort and Spa, Kapolei, Oahu, HI. CONTACT: Kathy Bates, 200 First Street SW, Rochester, MN 55905; 507/284-3942.

July 17-19 **Fifth Annual Course on Lasers in Cutaneous and Cosmetic Surgery** University of Minnesota/Continuing Medical Education; Radisson Hotel Metrodome, Minneapolis, MN. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 800/776-8636.

July 29-31 **Mayo Multidisciplinary Symposium on Platelets, Blood Vessels, and Extracorporeal Medicine** Mayo Foundation; Siebens Medical Education Building, Rochester, MN. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

July 30 **Coagulation Wet Workshop** Mayo Medical Laboratories; Phillips Hall, Rochester, MN. CONTACT: Julie McAdams, Mayo Medical Laboratories, 200 First Street SW, Rochester, MN 55905; 507/284-8599.

July 31 **Anticoagulation Clinics: Managing the Risks** University of Minnesota/Continuing Medical Education, Radisson Hotel Metrodome, Minneapolis, MN. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

July 31-Aug. 1 **Bleeding and Thrombosing Diseases: Back to the Basics** Mayo Medical Laboratories; Phillips Hall, Rochester, MN. CONTACT: Julie McAdams, Mayo Medical Laboratories, 200 First Street SW, Rochester, MN 55905; 507/284-8599.

AUGUST 1998

Aug. 3-5 **Allina Health System 1998 Primary Care Update** Allina Health System; Cragun's Conference Center, Brainerd, MN. CONTACT: Julie Page, Allina Health System Clinical Education and Research Administration-81475, 5601 Smetana Drive, PO Box 9310, Minneapolis, MN 55440; 612/992-3897.

Aug. 5 & Aug. 12 **Advanced Cardiac Life Support (ACLS)** Allina Health System; Abbott Northwestern Hospital, Minneapolis, MN. CONTACT: Julie Page, Allina Health System Clinical Education and Research Administration-81475, 5601 Smetana Drive, PO Box 9310, Minneapolis, MN 55440; 612/992-3897.

Aug. 9-11 **Success with Failure: New Strategies for the Evaluation and Treatment of Congestive Heart Failure** Mayo Foundation; Chateau Whistler, Whistler, British Columbia, Canada. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

SEPTEMBER 1998

Sept. 11-13 **Annual Ambulance Medical Directors Retreat** Hennepin County Medical Center; Radisson Arrowwood, Alexandria, MN. CONTACT: HCMC CME, 701 Park Avenue, Mail Code 861B, Minneapolis, MN 55415; 612/347-2075, toll-free 888/263-4262.

Sept. 13-16 **2nd Annual Meeting: Heart Failure Society of America** University of Minnesota/Continuing Medical Education; Boca Raton Resort and Club, Boca Raton, FL. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 13-18 **Advances in Diagnostic Radiology and Advanced Radiology Life Support Course** Mayo Foundation; Banff Springs Hotel, Banff, Alberta, Canada. CONTACT: Office of Continuing Medical Education, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Infection Control Courses

The following activities have been designed to meet the Minnesota Board of Medical Practice physician licensure requirement for CME credit in the subject of infection control.

ENDING MATERIALS

Videotapes: **Bloodborne Pathogens, Antibiotic Update and Resistance, TB Update** Allina Health System. CONTACT: Julie Page, 5601 Smetana Drive, PO Box 9310, Minneapolis, MN 55440-9310; 612/992-3897.

Videotapes: **Overview of Tuberculosis, Bloodborne Pathogens, HIV Update** University of Minnesota. CONTACT: Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600.

Sept. 14-15 **Advanced Life Support in Obstetrics (ATLS)** Allina Health System; United Hospital, St. Paul, MN. CONTACT: Julie Page, Allina Health System Clinical Education and Research Administration-81475, 5601 Smetana Drive, PO Box 9310, Minneapolis, MN 55440; 612/992-3897.

Sept. 15 **Endorectal Ultrasonography** University of Minnesota/Continuing Medical Education; Midway Outpatient Clinic, St. Paul, MN. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 16 **Molecular Biology of Colorectal Cancer** University of Minnesota/Continuing Medical Education; Radisson Hotel Metrodome, Minneapolis, MN. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 16 **Pelvic Floor Physiology Course** University of Minnesota/Continuing Medical Education; Midway Outpatient Clinic, St. Paul, MN. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 16-19 **First National Conference on Infanticide: Asphyxiation, Shaken Baby, and Neglect** Hennepin County Medical Center; St. Paul Radisson, St. Paul, MN. CONTACT: HCMC CME, 701 Park Avenue, Mail Code 861B,

Minneapolis, MN 55415; 612/347-2075, toll-free 888/263-4262.

Sept. 16-19 **Radiology Refresher Course** University of Minnesota/Continuing Medical Education; Silverado Resort, Napa, CA. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 17-19 **Principles of Colon and Rectal Surgery (61st Annual Course)** University of Minnesota/Continuing Medical Education; Radisson Hotel Metrodome, Minneapolis, MN. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 18 **Annual Contemporary Issues in Hemodialysis** Hennepin County Medical Center; Sheraton Midway Hotel, St. Paul, MN. CONTACT: HCMC CME, 701 Park Avenue, Mail Code 861B, Minneapolis, MN 55415; 612/347-2075, toll-free 888/263-4262, or fax 612/904-4210.

Sept. 18 **Primary Care Conference** St. Mary's/Duluth Clinic Health System; Spirit of the North Theatre, Fitger's Complex, Duluth, MN. CONTACT: Diane Torvick, 400 East Third Street; Maildrop 5AV2ME, Duluth, MN 55805; 218/725-3838.

Sept. 18-19 **Current Trends in Ophthalmology: Ophthalmic Lasers** Phillips Eye Institute; DoubleTree Grand Hotel, Bloomington, MN. CONTACT: Julie Page, Allina Health System Clinical Education and Research Administration-

Medical Director

Central Minnesota Group Health Plan has an opportunity for a board certified family practitioner with strong leadership and practice management skills to lead our physician group as Medical Director. This full-time position involves 60% medical administration and 40% clinical practice. Must have at least 5 years current practice experience (OB a plus), working knowledge of managed care principles, and proven leadership/communication abilities. QUM experience preferred.

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Mr. Ennis Arntson, Administrator
800 Clinic Circle, Fairmont, Minnesota 56031
Phone: 507-238-8596 Fax: 507-238-8510
E-mail: hansen.duwayne@mayo.edu or
arntson.ennis@mayo.edu

81475, 5601 Smetana Drive, PO Box 9310, Minneapolis, MN 55440; 612/992-3897.

Sept. 19-20 **Clinical Autonomic Quantitation Workshop** Mayo Foundation; Mayo Foundation, Rochester, MN. CONTACT: Office of Continuing Medical Education, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Sept. 24-26 **Mechanical Ventilation: Principles and Applications** University of Minnesota/Continuing Medical Education; Hyatt Regency Hotel, Minneapolis, MN. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 25-26 **Evaluation and Management of Peripheral Vascular and Cerebrovascular Disease** University of Minnesota/Continuing Medical Education; Radisson Hotel Metrodome, Minneapolis, MN. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 25-26 **Advanced Techniques in Cutaneous and Cosmetic Lasers** Abbott Northwestern Hospital Institute for Minimally Invasive Technology; Abbott Northwestern Hospital, Minneapolis, MN. CONTACT: Julie Page, Allina Health System Clinical Education and Research Administration-81475, 5601 Smetana Drive, PO Box 9310, Minneapolis, MN 55440; 612/992-3897.

Sept. 29 **Complementary and Alternative Health Care** University of Minnesota/Continuing Medical Education; Radisson Hotel Metrodome, Minneapolis, MN. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

OCTOBER 1998

Oct. 1-2 **Annual Forensic Science Seminar** Hennepin County Medical Center; HCMC, Minneapolis, MN. CONTACT: HCMC CME, 701 Park Avenue, Mail Code 861B, Minneapolis, MN 55415; 612/347-2075, toll-free 888/263-4262.

Oct. 8 **Current Issues in Point-of-Care Testing** Mayo Medical Laboratories; Mayo Clinic, Rochester, MN. CONTACT: Julie McAdams, 200 First Street SW, Rochester, MN 55905; 507/284-8599.

Oct. 9-10 **Current Issues in Phlebotomy** Mayo Medical Laboratories; Mayo Clinic, Rochester, MN. CONTACT: Julie McAdams, 200 First Street SW, Rochester, MN 55905; 507/284-8599.

Oct. 16 **Seventh Annual Conference for Planners of Continuing Medical Education** Minnesota Medical Association Committee on Accreditation and CME; The Northland Inn, Brooklyn Park, MN. CONTACT: Jane Phillip, 3433 Broadway Street NE, Suite 300, Minneapolis, MN 55413; 612/378-1875, 800/342-5662.



Continuing Medical Education

presented by Allina Health System

August, 1998

3-5 1998 Primary Care Update

PRESENTED BY: Allina Health System

LOCATION: Cragun's Conference Center, Brainerd, MN

September, 1998

11 Update in Clinical Cardiology

PRESENTED BY: Minneapolis Heart Institute Foundation

LOCATION: Radisson Arrowhead Resort, Alexandria, MN

18-19 Current Trends in Ophthalmology: Ophthalmic Lasers

PRESENTED BY: Phillips Eye Institute

LOCATION: DoubleTree Grand Hotel, Bloomington, MN

25-26 Advanced Life Support in Obstetrics (ALSO)

PRESENTED BY: Allina Health System

LOCATION: United Hospital, St. Paul, MN

25-26 Advanced Techniques in Cutaneous and Cosmetic Lasers

PRESENTED BY: Abbott Northwestern Hospital Institute for Minimally Invasive Technology

LOCATION: Abbott Northwestern Hospital, Mpls., MN

October, 1998

30 Frontline Neurology

PRESENTED BY: Minneapolis Neuroscience Institute

LOCATION: DoubleTree Grand Hotel, Bloomington, MN

November, 1998

7 Laughter: A New Twist to the Old Illness

PRESENTED BY: St. Francis Cancer Center, Shakopee

LOCATION: The Wild's Country Club, Shakopee, MN

9-10 Advanced Trauma Life Support (ATLS)

PRESENTED BY: Allina Health System

LOCATION: United Hospital, St. Paul, MN

14 6th Annual Orthopedic Symposium

PRESENTED BY: United/Mercy Hospitals

LOCATION: Earle Brown Heritage Center, Brooklyn Park, MN

For more information contact:
Allina Clinical Education and Research
Administration at (612) 992-2424



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- Cancellation of ads must be made by the first of the month preceding month of issue.

Mankato Clinic, Ltd., is seeking additional BC/BE physicians in the following specialties: occupational medicine, dermatology, orthopedic surgery, pulmonary medicine, radiology, and urgent care. The Mankato Clinic is a 70-physician multispecialty group practice in south-central Minnesota with a trade-area population of 250,000+. Guaranteed salary first year, incentive thereafter with full range of benefits and liberal time off. For more information, call Dr. Bryon C. McGregor, Medical Director, or Roger Greenwald, Executive Vice President, 507/625-1811, or write PO Box 8674, Mankato, MN 56002-8674. (6/98-R)

MDsearch assists medical groups and hospitals in their recruiting efforts. For confidential information on opportunities in the Upper Midwest, send CV and/or call collect Mary Jo Cordes, MDsearch, PO Box 21507, St. Paul, MN 55121; 612/454-7291. Fax: 612/454-7277. (2/93-R)

Urgent Care Physicians: Independent group seeking part-time/full-time physicians to staff our urgent care facilities in Bloomington, Burnsville, Edina, and Lakeville. Contact the director of support services, 612/985-8931, or send inquiries to Quello Clinic Ltd., 7801 East Bush Lake Road, Suite 300, Bloomington, MN 55439. (*6/98-R)

Family Physicians: Independent, well-established suburban family physician group seeking part-time/full-time family physicians who like doing ob/gyn and full FP services. Clinics are in Bloomington, Burnsville, Edina, Eden Prairie, Lakeville, and Savage. Excellent call schedule. Contact medical director at 612/985-8922, or write to Quello Clinic Ltd., 7801 East Bush Lake Road, Suite 300, Bloomington, MN 55439. (*6/98-R)

Olmsted Medical Center is seeking BC/BE physicians in family medicine and ob/gyn physicians to join our 75-physician multispecialty group. Great opportunity for well-trained physicians to join a family-friendly group in a dynamic, progressive practice. In addition to its main office

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Falls Medical Search seeks Physicians for practice opportunities locally and nationally. To explore new practice options confidentially, send your CV or call Pat Falls, Falls Medical Search, 34 Forest Dale Road, Minneapolis, MN 55410; 612/922-0207 or 800/383-8916. (*5/92-R)

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Emergency Medicine: North Memorial Health Care of Minneapolis is a leader in primary and emergency care in the state of Minnesota. We anticipate two openings for full-time physicians to provide emergency medicine at area hospitals where we provide emergency department physician staffing. One location is approximately 45 minutes south of the metro area and the other is about 45 minutes northwest of the Twin Cities. Annual emergency department volume at these hospitals is approximately 10,000 and growing. All shifts are 12 hours. The physicians we seek should be BC/BE in primary care (FP, IM, EM) and able to see patients of all ages. The physician will be an employee of NMHC and eligible for a competitive wage and premium benefits package. Interested candidates should fax their CV and salary requirements to: NMHC at 612/476-4075. EOE 1-7/98

GERIATRICIAN EXTENDED CARE PROGRAM DEPARTMENT OF MEDICINE HENNEPIN COUNTY MEDICAL CENTER

Hennepin County Medical Center, a major teaching affiliate of the University of Minnesota, is seeking additional internal medicine-geriatric medicine faculty for

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Director, Extended Care Department
Department of Medicine
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Primary Physician Network

6500 Excelsior Boulevard

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EMERGENCY MEDICINE

North Memorial Health Care of Minneapolis

is a leader in primary and emergency care in the state of Minnesota. We anticipate two openings for full-time physicians to provide emergency medicine at area hospitals where we provide emergency department physician staffing. One location is approximately 45 minutes south of the metro area and the other is about 45 minutes northwest of the Twin Cities.

Annual emergency department volume at these hospitals is approximately 10,000 and growing. All shifts are 12 hours. The physicians we seek should be board certified/eligible in primary care (FP, IM, EM) and be able to see patients of all ages. The physician will be an employee of NMHC and eligible for a competitive wage and premium benefits package.

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Internal Medicine: Bloomington Lake Clinic seeks a BC/BE general internist to join our existing department. We are a multispecialty group formed in 1930 that is owned and governed by its own physicians. We have purposely not aligned with any one health plan or hospital system. We offer a minimum guaranteed salary the first two years with a full range of benefits and the opportunity for ownership. Please contact or send CV to: John R. Bjorklund, M.D., President, or Robert Vogel, Administrator, at 3017 Bloomington Avenue South, Minneapolis, MN 55407; 612/721-6511. Fax: 612/721-0239. 2-7/98

Duluth, Minnesota, Family Practice Opportunity: Eight physician, independent practice seeks full-time BC/BE family physician. Send CV and/or call us for further information. Contact Niles Batdorf, M.D., or Mary Rapps, Administrator, P.S. Rudie, M.D. & Associates, Ltd., 324 West Superior Street, Suite 302, Duluth, MN 55802; 218/722-6613; e-mail: mrapps@psrudie.com 2-8/98

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Family Physicians: Independent, well-established suburban FP group seeking part/full-time FPs who like doing OB and full FP services. Clinics in Bloomington, Burnsville, Edina, Eden Prairie, Lakeville, and Savage. Excellent call schedule. Contact: medical director at 612/985-8922 or write Quello Clinic Ltd., 7801 East Bush Lake Road, Suite 300, Bloomington, MN 55439. 1-7/98

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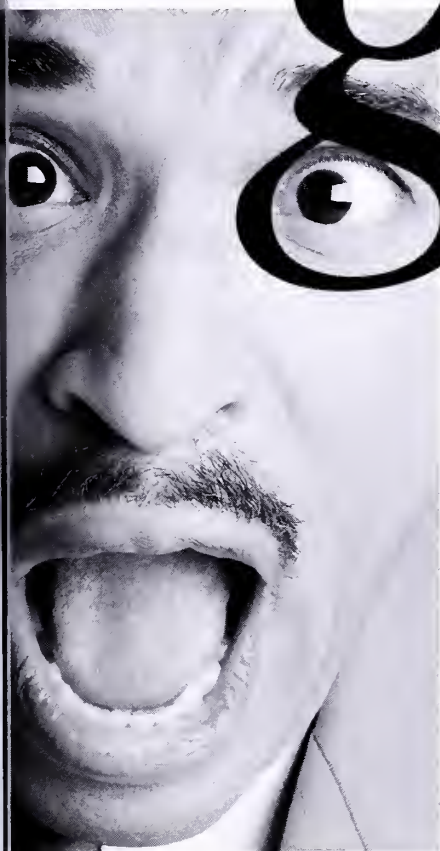
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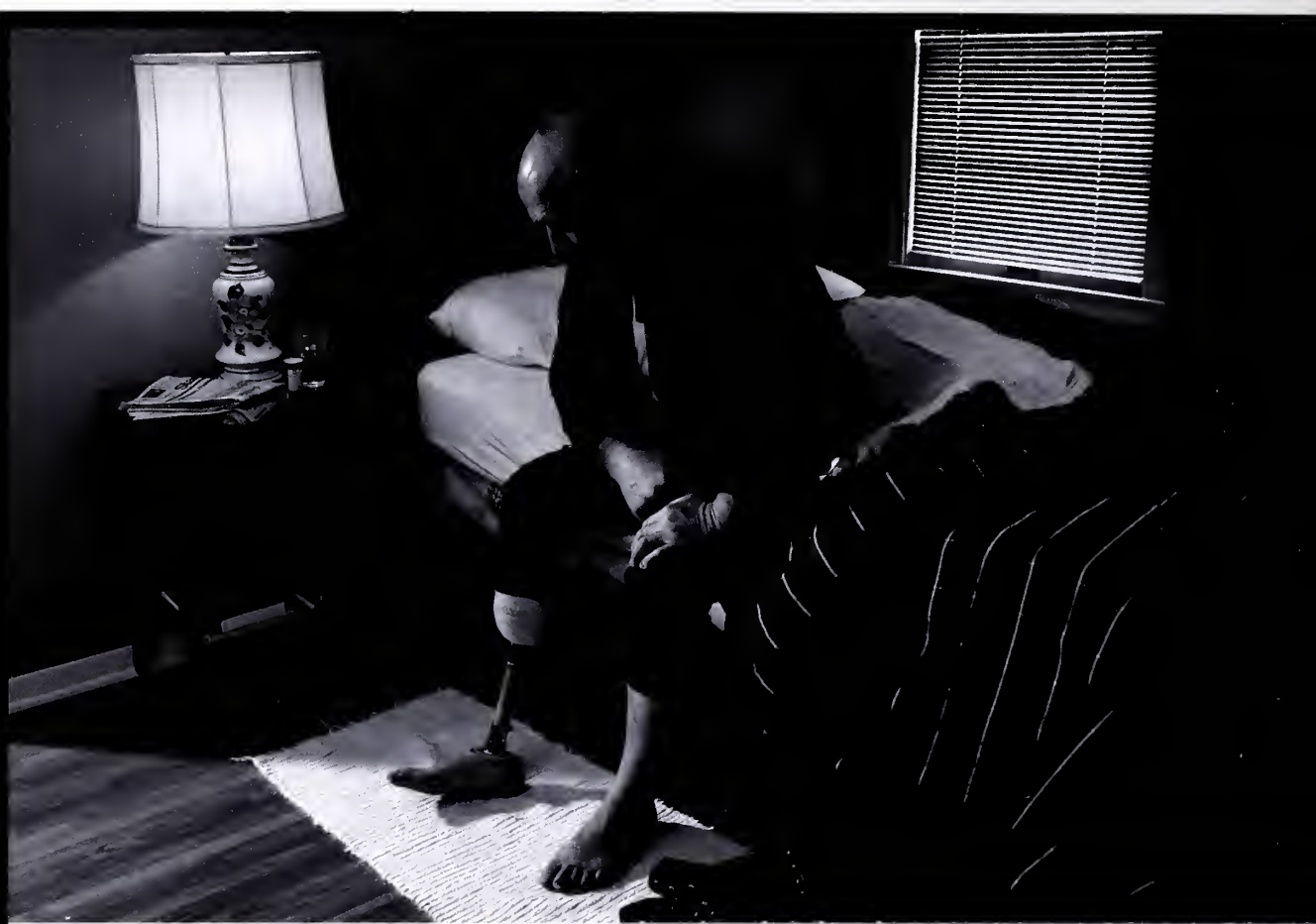


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AUGUST 1998

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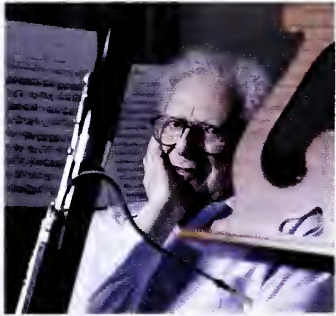


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Minnesota Medicine

Published monthly by the Minnesota Medical Association



COVER

Photograph of Reuben Berman, M.D., by John Noltner (see Face to Face profile, page 6).

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- 47 IS IT POSSIBLE TO SLOW DOWN TO THE SPEED OF LIFE?** Reviewed by Robert Veninga, Ph.D.
Just because you're busy doesn't mean you can't find peace and enjoyment every day, say the authors of "Slowing Down to the Speed of Life."

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An English teacher-turned medical communications expert introduces his new column on medical writing with advice on how to get started: Just write.

Of Time and Rivers

Our life is spent trying to find something to do with the time we have rushed through life trying to save.

—Will Rogers



.....
*"In modern
 America,
 leisure time
 becomes a
 harried chase
 to collect
 experiences."*

This month's issue of *Minnesota Medicine* is about time—how physicians spend their free time. As you will discover in these pages, physician avocations encompass the obscure and the obsessional. Whether they entail building miniature models in exquisite detail or risking one's life ascending Mount Everest, hobbies offer

a respite from the time demands of medical practice. So, sitting by South Willow Creek in Montana's Tobacco Root Mountains, I'll take this opportunity to ruminate about time, docs, and rivers.

Physicians might consider "free time" an oxymoron. Few occupations are more preoccupied with time. Fifteen-minute appointments and 40 phone calls a day make for multiple deadlines and continuously shifting priorities. We triage illnesses, we triage patients, and we triage paperwork. Most physicians feel crunched between the clock and patients' needs. Listen to one doctor greeting another and notice how often the exchange goes: "How are you?" "Busy." There's never enough time.

Of course, this feeling is not just a doctors' ailment. Time pressure is endemic to American society. In their 1997 book, "Time for Life: The Surprising Ways Americans Use Their Time," authors John Robinson and Geoffrey Godbe examine the historical evolution of American attitudes toward time and then analyze time diaries across three decades to see how Americans' use of time has changed.

The authors see current American attitudes as an extension of the social reformers' push in the 1830s to make leisure time more planned and useful. They describe the

last two decades' search for "time-deepening" leisure activities. Leisure time can be deepened by speeding up a given activity (touring a national park in a car), substituting an activity that can be done faster (ordering out rather than cooking in), doing more than one activity at a time (using a cell phone while walking to the store), and regulating leisure time. In modern America, leisure time becomes a harried chase to collect experiences, like so many commodities to be accumulated. Self-worth is defined by what you have and what or how much you do. When this happens, leisure time doesn't promote leisure.

For many people, modern technology's promise of more free time seems false. Surprisingly, however, while *perceived* free time has declined in the last 30 years, the time diary studies reported in "Time for Life" show that *actual* free time has increased. We're at leisure more but noticing it less. The activity that has filled most of those extra hours of free time: TV.

So what are the lessons here for physicians? Since the phone will not stop ringing and disease is eternal, time demands won't disappear. But I would suggest reassessing leisure and work time. Amid the flood of deadlines, rediscover the joy of discovery, relearn the art of learning daily, and recreate the creativity that can be applied to daily details. Savor, don't labor over, free time. Socrates may have thought the unexamined life was not worth living, but he didn't teach at medical school. Contemplation and reflection are not skills taught well in medical school. Doctors need to cultivate them. Delmore Schwartz said, "Time is the school in which we learn/ Time is the fire in which we burn." We need more thoughtful learning and living, and less energy-sapping burning and bustling.

Our free time can either rejuvenate us—or it can consume us. Time is not a commodity, but a precious resource, like a rushing Montana mountain stream. We need to sit and enjoy it.

.....
 —Charles R. Meyer, M.D., Editor-in-Chief

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ALL HOBBIES

BY ANNE WELSBACHER



PHOTOGRAPH BY JOHN NOLTNER

When Reuben Berman was 6, his violin teacher told him he had a tin ear. “That’s not what she said, but it’s what she meant,” he says diplomatically. So he switched to the clarinet, which has fewer intonational problems. More than 60 years later, at age 67, he took up the bassoon to save the limelight for his son David, who also played clarinet. And, the cardiologist confesses, he suspected he might be eased out of

medicine soon, and he wanted something to keep him busy.

But all this is ancient history.

Reuben Berman, M.D., now 90, calls the bassoon a “demanding mistress, but a wonderful instrument.” It is still a large part of his life—he practices every day and plays regularly with the Northeast Chamber

Orchestra and the University of Minnesota's Health Sciences Orchestra—but it is by no means the only part of it.

This year Berman celebrated his 90th birthday by establishing a \$900,000 endowment for the Berman Center for Outcomes and Clinical Research, which he founded in 1965 and where he still works part time. The endowment was a gift from a former patient who funded a trust for the research center.

Berman, a prolific writer, has produced books, articles, and personal and business documents. He flew his own plane, a V-tailed Bonanza. He bakes bread and is an accomplished photographer. "I don't think he's slowing down at all," says Julie Levin, director of the Berman Center.

RESEARCH PIONEER

Berman was head of medical services for Mt. Sinai Hospital in 1966 when the hospital became a participant in a huge national study seeking a drug to defeat heart disease. The study didn't achieve its goal, but it was the first ever to handle large numbers of subjects—in all, 10,000 men from across the country over a five-year period.

"Nobody had ever done a study like this," says Berman. "When I was a resident at the University of Minnesota in the 1930s, I was hugely impressed with an investigator who could report on 100 patients."

At the study's end, Berman's group reported on 200 men—the same number they started with—a phenomenal and possibly unique compliance record. "Some were underground [dead], and we visited one in jail," he says.

The experience and reputation the team gained from that project led to more NIH-funded studies. Currently, the center is one of 40 national participants in what Levin calls "the mother of all studies": the Women's Health Initiative. The 15-year study involves about 150,000 postmenopausal women across the United States. The Berman Center is studying 4,000 Minnesota women aged 50 to 79 to see how changes in diet, hormone therapy, vitamin D, and calcium affect cancer, heart disease, and bone strength. The study occupies about 90 percent of the energies of the staff, which has grown from two to 25 people.

An early Berman Center study on hypertension pointed to both the seriousness of the condition and its treatability.

"When I was in medical school, you treated the effects, not the disease," says Berman. "In the 1930s, you waited for trouble. In the 1940s, you used only diet

treatments—and they were terrible diets. It wasn't until the end of the 1940s that any drug treatment began for hypertension."

The Berman Center opened as an arm of Mt. Sinai, moved to several other locations, and found its current home within the Minneapolis Medical Research Foundation at Hennepin County Medical Center about two years ago. "We established a track record in two areas," notes Levin. "We were always the best, and we did it in a quiet way. The numbers spoke for themselves.

Sometimes people say we're a well-kept secret, but among our peers and sponsors, we are definitely well-known."

The "quiet way" of his renowned center reflects Berman's own peculiar blend of homegrown humility and lofty ambition. The first thing he notes about the center is its convenient parking and the short time patients must wait in the lobby. "I've tried to inculcate in the minds of everyone who works for us that we are the servants of our clients, and that we treat them with utmost courtesy and

respect," he says. On the other hand, he found room at the new location to install a large, handsome case filled with his own trophies and awards—an aid, perhaps, in his work, which these days consists mostly of "fundraising and hoopla."

LIFE AND TIMES

Reuben Berman was born in 1908 into a large Jewish family with roots tracing nearly a century back into Lithuania and Poland. He lived for 20 years in the same north Minneapolis house, designed by his mother. His childhood family was loving, says Berman, and he carries that closeness into his own family, which includes sons David, Sam, and Ted (all Twin Cities physicians) and daughters Elizabeth Appelbaum (with a Ph.D. in math), Ruth Berman (a Ph.D. in English), and Jean Sogin (who has a degree in town planning). Berman describes his wife, Isabel, who died in 1989, as "the love of my life, as I was hers."

Berman was called into WWII as a flight surgeon. "That means you're a doctor assigned to the Air Force," he says dismissively. Thinking he ought to know something about flying if he was going to treat pilots, he learned to fly a plane.

"I quit [flying] 15 years ago when I realized I wasn't getting better. When you aren't getting better, you're getting worse," he says.

Such pragmatism seeps into all facets of Berman's busy life, both professional and avocational. Julie Levin has worked with Berman for more than 30 years and

"I quit flying 15 years ago when I realized I wasn't getting better. When you aren't getting better, you're getting worse."

—Reuben Berman, M.D.

considers him her mentor. "He taught me how to relate to patients so they trust me and are committed to the project," she says. "He taught me to treat the staff so that all feel a sense of ownership." And, she adds, "He's good with budgets. He taught me how to negotiate a deal."

Berman served as editor of *Minnesota Medicine* for three years in the early 1970s, while continuing his medical practice. "In my family, we have a lot of people who tend to be manic," he says. "I guess I'm a little hypomaniacal."

A LEGENDARY ENTERTAINER

Entertaining is another of Berman's passions. "He's a wonderful conversationalist," says Levin. "No matter what you're talking about, he'll have a personal story to tell."

Over the years, Isabel and Reuben Berman hosted legendary parties. "He could always call Isabel and say 'I'm bringing home six people for dinner,'" says Levin. "They entertained endlessly." Berman still entertains, annually hosting medical students from Galway, a tradition that started many years ago when Irish pathologist Padraic Ward came to work at Mt. Sinai.

The recipe for Berman's famous bread, which he developed himself, includes instructions to knead the

dough "till you get short of breath," and he warns any would-be baker that a trash bin is essential. "If you want to make bread, you've got to be ready for the occasional mistake, and you're better off throwing it out than trying to salvage it," he says.

Photos that Berman has taken over the years adorn the walls of his home and the Berman Center, and they fill the pages of the books and articles he has written. He has a Canon replete with exotic lenses and attachments, but these days he prefers to use a lightweight, all-in-one Olympus. Just before he snaps your photo, he might ask you to pull back your hair. "Know why I do that? To distract you, so you look more natural in the picture," he explains.

But Berman's greatest love remains music. He is currently working on a Vivaldi bassoon concerto—"which is beyond me," he says. His passion for music peppers the pages of "Dear Poppa," a collection of letters he and his family exchanged during World War II, compiled by his daughter Ruth and published by the Minnesota Historical Society Press.

The high point of his musical life was the day Isabel came running downstairs yelling at him for playing his clarinet late at night. "But it wasn't me," he says, a big grin splitting his wide face. "It was Benny Goodman, on the radio!"

Berman once played the shofar, a Jewish bugle made from a lamb's horn. But he doesn't care for the Orthodox restrictions on shofar practice, which is to be done only during Elul, in late August and early September. "Musicians know that to play an instrument well, practice must be a daily, year-round chore," he writes in a memoir. "When I was performing in public my shofaring was practiced in every month. And if I am refused eventual residence in heaven, I doubt it will be the result of this transgression." MM

Anne Welsbacher is a Minneapolis writer. She last wrote for Minnesota Medicine on doctor-patient communication.

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BY ATUL GAWANDE

Here it was: a **breakthrough** in cancer research. And you could believe it, because it was in the *Times*. Up at Harvard Medical School, the *Times* reported, Drs. Judah Folkman and Michael O'Reilly had shown that two proteins, angiostatin and endostatin, could **eradicate tumors** in laboratory mice without inducing drug resistance. The story outlined Dr. Folkman's visionary strategy—instead of attacking tumors directly, **block the growth** of the blood vessels that feed them—and described the **excitement** running through the cancer-research community.

The reaction? Well, when the stock market opened the next day, the share price of EntreMed, a small biotech company that was developing the drugs, ticked up by three whole dollars. Elsewhere, the *Times* story—which ran on November 27, 1997, on page A28—sparked little follow-up. After all, as the paper had noted, the company would have to figure out how to manufacture the drugs before it could even start clinical trials, and the reporter, Nicholas Wade, had been careful not to overhype the findings, predicting only that the drugs “may well prove relevant to the treatment of human cancer.”

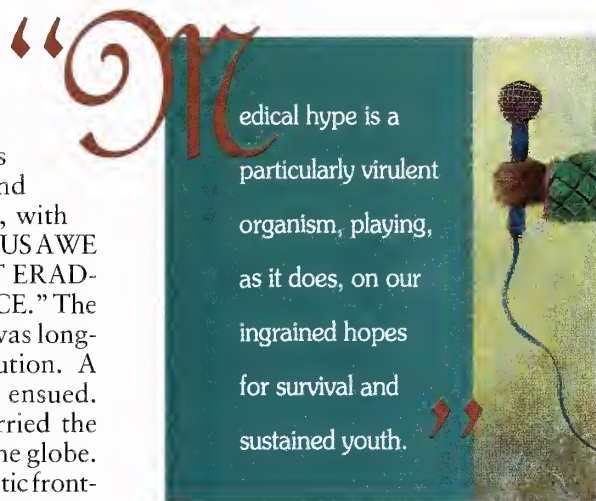
Yet now, not quite six months later, the news about endostatin and angiostatin is suddenly bigger than Monica and Godzilla combined. On Sunday, May 3rd, the *Times* ran the very same story, but this time at the top left-hand corner of the front page, with the headline, “A CAUTIOUS AWE GREETES DRUGS THAT ERADICATE TUMORS IN MICE.” The article below, however, was longer on awe than on caution. A media frenzy instantly ensued. Radio and television carried the story to every corner of the globe. In the *News*, under a gigantic front-page screamer—“OUR BEST HOPE”—the columnist (and cancer patient) Mike McAlary wrote, “Maybe we don’t have to die.” This time, EntreMed’s share price on Wall Street quadrupled, and about a billion dollars changed hands. By Thursday, the fuss was ubiquitous, and the *News*’s down-market archrival, the *Post*, indulged itself with a lead editorial that congratulated Dr. Folkman and then used him as a club with which to clobber, among other villains, non-Western medicine, “New Age witch-doctory,” political correctness, the animal-rights movement, and the “quasi-terrorism” of AIDS activists. And Random House had agreed to shell out a million dollars for a book about the new therapy. You’d think scientists had found a cure for impotence.

The tale of the two *Times* stories offers a controlled study in the pathogenesis of hype, because the facts had not changed a bit between November and May. Even Folkman is scratching his head. “I’m puzzled by the response, because this is five months old,” he says. The two stories were based on the same Folkman-O’Reilly study, which in November had at least been newly published, in the journal *Nature*. The May *Times* story contained no new scientific information but merely

garbed the old information in new superlatives. It had no “peg”—no recent event, no new development of the sort that editors usually require stories to include, lest their papers become arbitrary miscellanies. What prompted the May story, it has since emerged, was that James D. Watson, the Nobel laureate and co-discoverer of DNA, sat next to a *Times* reporter, Gina Kolata, at a dinner party and regaled her with praise of Dr. Folkman’s work. The resulting quote—“Judah is going to cure cancer in two years”—was splashed across the front page a few weeks later, and Ms. Kolata wrote, “Dr. Watson said Dr. Folkman would be remembered along with

scientists like Charles Darwin as someone who permanently altered civilization.”

Never mind that James D. Watson is not an expert on either drug development or clinical trials. Yes, he directs the Cold Spring Harbor Laboratory, a research center on Long Island that does work on cancer, but he isn’t a clinical investigator. Dr. Bruce Chabner, a former director of cancer treatment at the National Cancer Institute, says, “I think his prediction is based more on hope than on data.” Indeed, Watson himself immediately backpedaled, writing a letter to the *Times* in which he claimed that



he’d been misquoted.

Nature, in an editorial accompanying the mouse study back in November, had hailed the Folkman group’s findings for the possibility not of a cure-all but of a new class of chemotherapy which might evade tumor resistance. Some cancers, such as ovarian cancer, initially respond to chemotherapy but then develop resistance to it, because tumors are prone to mutation. Other cancers, such as prostate cancer and melanoma, are usually resistant from the get go. The new agents, however, according to the new theory, could avoid these problems by attacking the growth of non-mutating blood vessels. In the study conducted in Dr. Folkman’s lab, the theory was borne out, and that’s what scientists were all excited about. The fact that tumors didn’t grow back in the mice was unexpected but hardly unprecedented. Indeed, there are therapies with equally impressive records in animal studies which are already undergoing human trials.

Unfortunately, success in animals does not predict commensurate success in humans. Also—as *Nature* pointed out but the *Times* did not—drug resistance is just one of many factors that stymie anti-cancer drugs. The fact

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FIRST ANNOUNCEMENT

that a drug works in mice may give you slightly better odds, but you'd like to see some bigger animals try it. And then a few people, too. Right now, versions of endostatin and angiostatin that could be used on humans are not even available. EntreMed says it is at least a year away from having the drugs in sufficient quantities to test them. After that, another year or two must pass before we know whether these drugs work. And even then, Folkman says, "I don't see this as replacing other therapies. It would be used in addition to chemotherapy, radiotherapy, even to gene therapy and vaccine therapy."

Medical hype is a particularly virulent organism, playing, as it does, on our ingrained hopes for survival and sustained youth. An unavoidable part of the syndrome is that a handful of elite science journalists hold more power over medicine than any doctor in America does. Before angiostatin and endostatin, Viagra was the mother lode. Since formal trials are yet to be published in the medical literature, doctors learned about Viagra the same way everyone else did: they read about it in the paper. It's the same way they learned that Propecia could reverse hair loss, that fen-phen is a miracle drug that will save obese patients' lives, and (a year later) that fen-phen is an evil drug that damages your heart valves.

Medical schools teach doctors to read the studies closely and identify the flaws and uncertainties before they even think about changing the care they are providing. But desperate patients, newspaper clippings in hand, clamor for the latest pill, so doctors make do with what's in the news and what the drug-company detail men tell them. Reporters quickly move on to write up the next big drug, and doctors are left to react and improvise, practicing medicine by their wits. It's up to them, and to their patients, to develop immunity to the recurring epidemics of hype. Journalism, alas, cannot be tested on mice. **MM**

Atul Gawande is a surgical resident at a Harvard-affiliated hospital in Boston and a research fellow at the Harvard School of Public Health. He writes a regular column called "The Medical Examiner" for the online magazine Slate.

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The Power of the Pen

Medical Journalism and Public Awareness

Medical journalists have assumed a powerful position given the public's voracious appetite for medical news.

BY SCOTT EGGNER

With approximately 4,000 journals indexed on MEDLINE, containing more than 9 million abstracts, the sheer mass of emerging biomedical knowledge is overwhelming.¹ Unfortunately, there is a gap between the wealth of expanding information and the quality of public health, partly because of the difficulty of dispensing this information to the lay public. The editors of the *New England Journal of Medicine* noted recently that "the problem of [communicating health] is not in the research itself but in the way it is interpreted for the public."² To facilitate the flow of pertinent medical research to the public at large, we rely on the skills of medical journalists.

Reflecting the public's voracious appetite for medical news, health stories are now regularly found as page 1 newspaper stories and as daily segments on prime-time television newscasts. In addition, the need for reliable sources of medical news has produced the *Journal of Health Communication*, a Division of Health Communication at the Centers for Disease Control and Prevention, health communication graduate programs offered at six universities, and other resources. Thus, medical journalists are facing expanding job opportunities, greater visibility, and the potential to have a more powerful impact.

Among the media available to reach American health information consumers are newspapers, magazines, medical journals, billboards, radio, pamphlets, and mailings. Two of the most influential and extensive are television and the Internet. The potency of television can be illustrated by a recent survey of regular viewers of the NBC medical drama "ER"³; 32 percent indicated that information they receive from the show helps them make choices about their family's health care. Remarkably, 12 percent of viewers have contacted their physicians because of something they saw on the show. Another widely used system, the Internet, provides around-the-clock access and, unlike many other resources, is capable of accommodating personal health inquiries. This ever-growing collection of information continues to influence the "wired" groups of society—the educated, wealthy, Generation X, and baby boomers—and has great potential for countless others.

While every practicing physician is a health communicator, some choose to make it a career. When the American Medical Writers Association (AMWA) was founded in 1940, its membership consisted almost entirely of those with M.D. degrees. Over the next 50 years, however, physician membership in AMWA steadily declined. In 1955, 76 percent of members possessed an M.D. degree, yet in 1991 this figure dropped to only 9 percent.⁴ Betty Cohen, former president of AMWA, explains that, "As AMWA evolved, other [nonphysician]

writers entered, bringing different expertise. Physicians may have felt it was no longer their organization." Since 1991 this trend has begun to reverse itself and as AMWA membership has increased by 20 percent to 4,000 members, physicians now comprise 12.5 percent of all members. There are few data available to assess the total number of physician writers without ties to professional organizations.

Defining the job of a medical journalist is difficult. They specialize in fields as varied as marketing, public relations, policy planning, advertising, speechwriting,

producing, and computer programming. They work in newsrooms, corporations, hospitals, nonprofit organizations, entertainment industries, schools, government agencies, health maintenance organizations, and pharmaceutical firms.

While the range of occupational opportunities for a medical journalist is extensive, it is difficult to gauge employment supply and demand. Compensation for medical journalists varies widely. Free-lance writers are paid per word or per project, while a full-time metropolitan newspaper reporter earns about \$80,000 per year.

Some writers' incomes are dependent on subscriptions or syndication. Becoming a medical writer can be as easy as distributing a newsletter. However, landing a full-time position in a major media market typically requires considerable experience.

"If physicians have the same attributes as a really good journalist, they help reflect a better rendition of reality," says Stephen J. Bloom, associate professor of journalism at the University of Iowa. According to Bloom, the model doctor and journalist share similar qualities: the ability to conduct a focused and fact-oriented interview, perform a relevant (physical) examination, assemble reliable and reproducible data, analyze quickly and accurately, and describe results in a clear, concise, and unbiased manner.

While physicians offer the advantages of under-

"Medical journalists are facing expanding job opportunities, greater visibility, and the potential to have a more powerful impact."

POWER OF THE PEN continued on page 48

Work Hard,

*Minnesota Medicine
traversed the state in
search of physicians
with unusual hobbies.
You may be surprised
to discover what*

Physicians are notorious for hard work, but *Minnesota Medicine* decided to search the state for physicians hard at play. We found docs pursuing hobbies on the road, in the air, on stage, in the forest, and in their garages, for reasons you might imagine: curiosity, zest for life, thirst for challenge, appreciation of beauty, and desire to learn. Hobbies can be a welcome diversion from the demands of medicine. Many physicians said their hobbies bring them closer to their families. Others said hobbies enhance their rapport with patients and bring balance to their lives, making them better doctors.

Despite hectic work and family lives, Minnesota physicians find time to have fun and sample life's amazing smorgasbord. Here's what we found in our travels around the state.

Play Hard

*some of your
colleagues are up to
in their spare time.*

Up, Up and Away

Nothing beats ballooning through a cumulus cloud at 9,000 feet, according to Clay Cowl, M.D., a 31-year-old pulmonary and occupational medicine physician at Mayo Clinic in Rochester. "It's the most impressive sound of silence," he says. "In a balloon, you are in the atmosphere. Nothing separates you. No other sport offers you such a fantastic perspective, plus you apply the same aviation and navigation skills you need when flying a plane."

To Cowl, ballooning is mostly about beauty. "It's like levitating. There

Story by Howard Bell & Photos by John Noltner

is no turbulence, because you are rising with the air currents, not fighting them." At ballooning rallies, his family picnics with other families. Children scamper. It's a festive, wholesome spectacle. "We all experience child-like awe when we see a balloon," says Cowl. "It catches us off guard."

Cowl has ballooned over the stately lawns of southwest Rochester and seen folks on riding mowers zig-zag out of their perfect diagonal cuts while gawking. An entire Amish family lined up in their front yard, tallest to shortest like Whos in Whoville, heads tipped skyward, a row of cows lined up behind them. "Sound travels vertically, so I can hear conversations from a thousand feet up," he says.

No other form of flight offers such precise vertical control, according to Cowl. "I can brush the tassels of a cornfield or do a touch and lift on Lake Zumbro."

Cowl's hobby has merged with his profession. His research paper, "Factors Associated with Fatalities and Injuries from Hot-Air Balloon Crashes," appeared in April 1998 in the *Journal of the American Medical Association*. "Balloons are very safe if you use common sense and don't break the rules," says Cowl. "Pilot error—not mechanical failure—is the biggest cause of accidents." Cowl is getting a reputation as a ballooning safety guru and has been asked to speak in Luxembourg to the International Hot Air Balloon Society.

"It's a nice diversion from medicine," he says. "Everyone should experience it at least once."

(Green) Thumbs Up

As a child, Robert Sonntag, M.D., couldn't wait to grow up so he could buy his own land and grow things. Today, the 49-year-old Park Nicollet geriatrician grows 130 fruit trees—apples, plums, cherries, and pears—on his five-acre hobby farm in western Hennepin County. Vegetables, too. "I grow the finest jack-o'-lantern pumpkins available," he says. "Big, smooth-sided, and sturdy-stemmed."

He gives it all away to friends, neighbors, and co-workers. His farm provides a little bit of country in the city—kids run wild through his pumpkin patch and grown-ups chatter and pick. Among his regular visitors are residents of a group home where he's medical director. His wife and three teenage children help out, but mostly they tolerate his hobby, says Sonntag. "It's something I'll always do, as long as I can bend over and pick weeds."

Six of the last seven years, Sonntag has won the Minnesota State Fair Fruit Sweep-

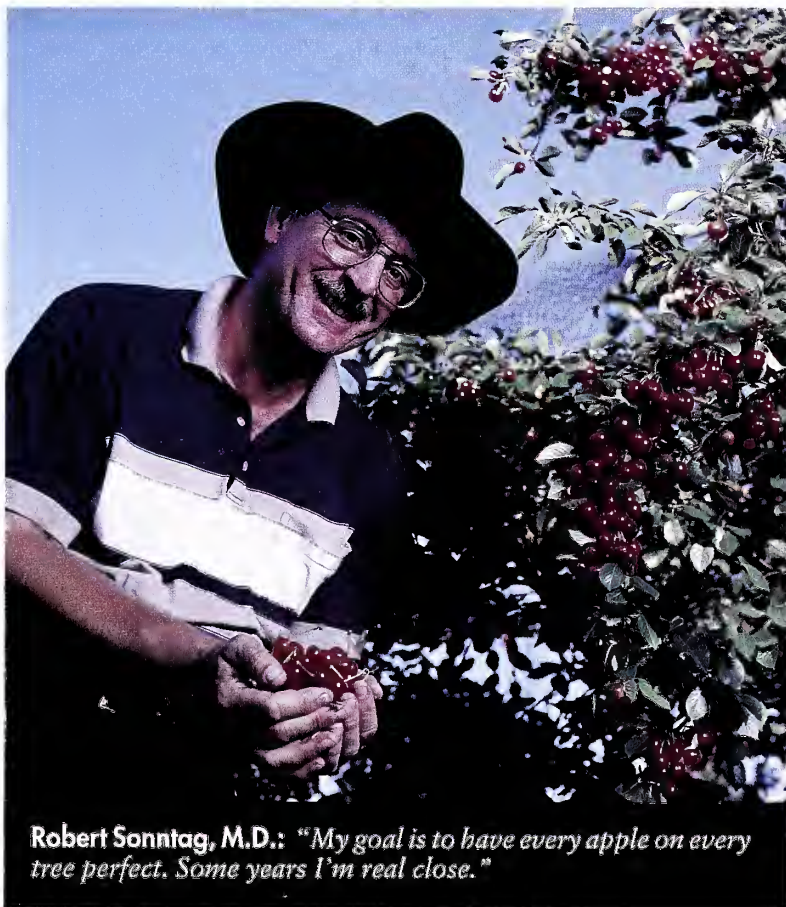
stakes Championship. The same perfection he brings to medicine he applies to his orchards. "My goal is to have every apple on every tree perfect. Some years I'm real close."

Ducktails and Grease Monkeys

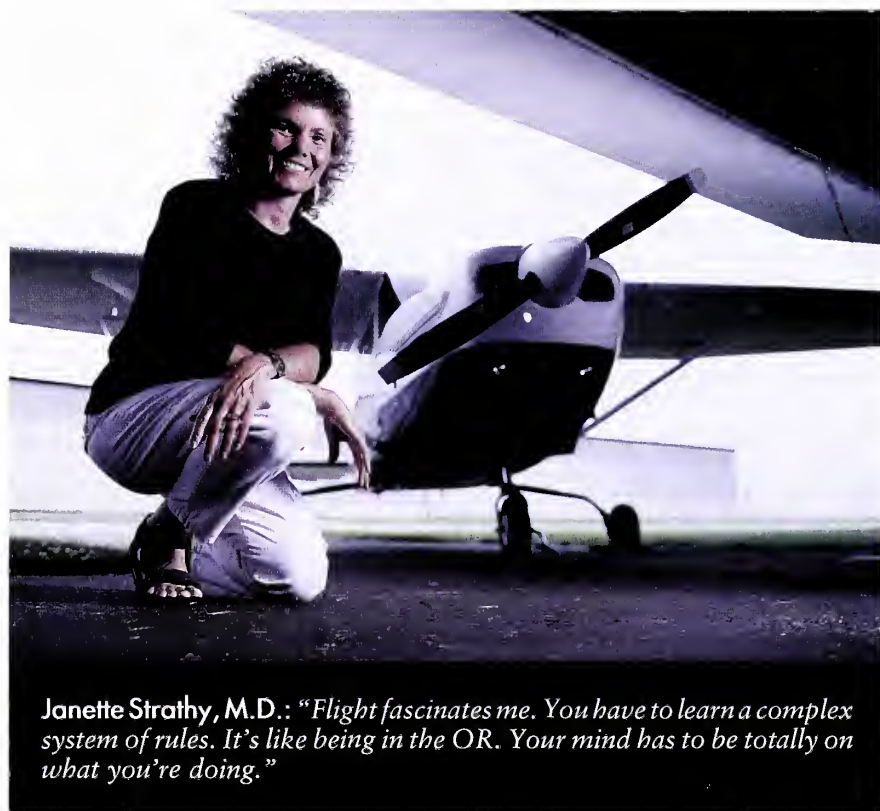
Looking for Dr. Don Anderson? Check under the hood of his 1935 fire-engine red Chevy Coupe. Chuck Berry, Elvis Presley, and Little Richard are with him. Anderson is a street rodder, which means he refurbishes old cars and revels in the life and times of a 1950s teenager. He's a grease monkey at heart—a St. Paul anesthesiologist by trade. "I'm not a body man," says Anderson. "I work on the engine and transmission—the mechanical stuff."

Street rodding is a family affair for the Andersons. Sometimes his wife, Diane, son, Jason, or daughter, Jessica, travel with him to six or seven street rod events each year. "When we caravan to events in other cities," says Anderson, "there's bound to be breakdowns. Everybody pulls over, gets under the hood, and pitches in. You meet some great people."

Street rodding keeps alive a time gone by, according to Anderson, who's 55. "It's about ducktails, grease monkeys, and rock 'n' roll—a simpler time. Most of these guys used to be the high school hoods. Now they're



Robert Sonntag, M.D.: "My goal is to have every apple on every tree perfect. Some years I'm real close."



Janette Strathy, M.D.: *"Flight fascinates me. You have to learn a complex system of rules. It's like being in the OR. Your mind has to be totally on what you're doing."*

settled family men. It's a great getaway from medicine. After a hard day at work, I go to the garage, turn on some old-time rock 'n' roll, crawl under the car, and lose track of time. It's a different world."

A Family That Flies Together ...

Is there a gene sequence for flight? Consider Gregg and Kevin Strathy: identical twins, both Twin Cities physicians, both passionate about planes, as is their father. Gregg's wife, Janette, is a 42-year-old obstetrician/gynecologist at Park Nicollet Clinic. She got her license four years ago. "It's my husband's passion," she says. "I learned how in order to keep sane."

Many amateur pilots are physicians, but only 6 percent are women. Jan Strathy was fearful of flying at first. "I overcame my fear by doing, but I'm still very cautious," she says. She and her husband fly cross-country to visit relatives in Massachusetts and Montana. They regularly fly to their cabin near Lutsen.

Doctors make the worst pilots—or so Strathy has heard so many times that it's piqued her curiosity. She hasn't found a shred of data to support the assertion, but she can easily imagine where it came from. "It might have to do with some doctors breaking the rules, feeling they can do anything," Strathy surmises.

Flying demands attention to detail, at which physicians tend to excel. It requires knowledge of physics and mechanics, subjects that appeal to science-loving M.D.s.

"Flight fascinates me," says Strathy. "You have to learn a complex system of rules. It's like being in the OR. Your mind has to be totally on what you're doing."

The stack of aviation journals at the Strathy home is as high as the stack of medical journals.

How to cure an aviation obsession

Robin Crandall, M.D., an orthopedist with Orthopaedic Partners in Fridley, wasn't satisfied with merely flying a plane. Using a kit, he built his own plane in the basement, starting at step one—installing a garage door in his basement wall. Three years and 1,400 hours later, he emerged from the basement a certified aircraft and power craft mechanic in a two-seat, single-engine plane that climbs 2,000 feet in one minute, about three times faster than a standard single-engine airplane. It leaves the ground in only 300 feet, instead of the usual 1,500 feet.

"I definitely would not build another," he says. "Triple the hours the instructions say it will take. You find yourself becoming obsessed with finishing it—taking vacation time and getting mad at it." His wife, also a pilot, has forbidden him from ever building another.

Solid Gold

Wayne Liebhard, M.D., calls it the "Linda Blair Syndrome"—when a patient's head spins after she recognizes her doctor on stage jumping around and hammering out a rock guitar solo. When Liebhard is not practicing family medicine in the Minnesota River Valley, he's playing lead guitar for Solid Gold, a for-hire rock band that plays mostly '50s and '60s tunes at weddings, parties, clubs, and fairs. "At first I felt a little uncomfortable being seen by my patients," he says, "but I realized it actually enhances my relationship with patients. They see my human side."

Liebhard played trombone in high school and considered becoming a professional musician while at St. John's in Collegeville. Solid Gold is basically the same group he started playing with in 1975. The band is recording a compact disc that includes a tune Liebhard wrote and arranged called "It's a Long Way from Doing Karaoke to Singin' in Nashville." Liebhard says it's about not giving up your day job for a long shot.

Rather than taking him away from his family, the

band brings them together. His wife, Joy, his teenage son, Reilly, and daughter, Erinn, often travel to gigs with Liebhard. "All the [band members'] kids have grown up together," he says. "It's been like an extended family."

"If you can dance to it, we play it," says Liebhard, whose favorites are old Beatles tunes that allow him to open up on guitar leads. Solid Gold plays at charitable fundraisers, recently for the Southern Alliance for Battered Women and for a Shakopee High School hockey player paralyzed during a game.

"Music is a great diversion from medicine and a great stress reliever," says Liebhard. "It's also kept me humble and in touch. It gives me a chance to give back to the community, too." Liebhard was last year's MMA Community Service Award winner.

Easy Rider

When Lyle Munneke, M.D., mounts his chromed, saddle-bagged Harley UltraGlide, he has two decisions to make: "Should I turn left out of the motel parking lot or right? Do I stop at the next town for a cup of coffee or keep going?"

The 63-year-old Willmar family physician has been living to ride and riding to live since he was 13. Dressed in full leathers, Munneke rides the nation's blue highways on the biggest bike Harley-Davidson makes. Six thousand miles he logged on his hog last summer, carrying little more than a stack of country and western tapes for his helmet-speaker stereo, a CB radio, and an extra pair of socks. "I'm fortunate to have good physician partners who let me take a little extra time off," he says.

When the calendar says spring but there's no sign of it in Minnesota, Munneke heads south in search of wildflowers—the desert flowers in Arizona and the bluebonnets in south Texas. He's biked through the blazing Blue Ridge in fall. He's biked past glacial lakes reflecting snowcapped Canadian Rockies. Usually he bikes alone (which is fine with his wife, who prefers the comforts of home).

"I like the independence and the scenery, and I like to meet other people and see how they live," says Munneke. When friends and colleagues ask if he minds biking alone, he replies, "I'm not alone—the three of us go: me, my motorcycle, and my credit card."

Munneke belongs to the Willmar Harley Club. Sometimes he rides to the boss of all hog rallies in Sturgis, South Dakota. "I think I can say I have the largest collection of Harley paraphernalia in Minnesota," says Munneke of his Harley clocks, jackets, plates, steins, pictures, and piggy banks. "I have more fun than most doctors. If you told me

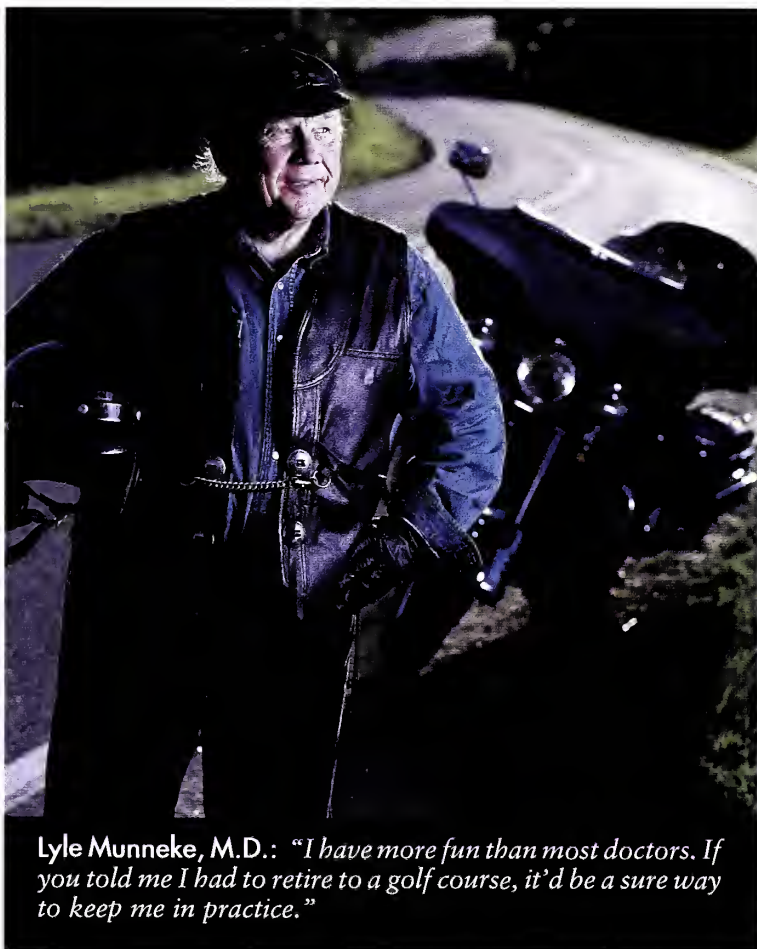
I had to retire to a golf course, it'd be a sure way to keep me in practice."

Specialty Care for Nature

Charles Ehlen's career counselor at St. John's University encouraged him to forget medicine. "I took an aptitude test that said I should be a priest or a forester," says the St. Cloud urologist. Today, Ehlen is all three. He ministers to 640 acres of central Minnesota forest and wetlands. In 1995, Ehlen and his wife, Nancy, were named Minnesota Tree Farmers of the Year.

The Ehlen's have planted more than 20,000 trees, built ponds for wildlife, and managed their forests for timber, recreation, and wildlife. Their latest acquisition is a five-acre plot of land that includes a lake in Morrison County's only abandoned iron mine pit. "It's teeming with smallmouth bass," says Ehlen.

Ehlen likes to get up early, hike a ways, then sit and watch. "I've seen an owl swoop down, grab a grouse, and swallow it whole," he says. "I've seen a Canada goose take flight with a snapping turtle clenched to its leg. These are things I will probably see only once in my lifetime." ➔



Lyle Munneke, M.D.: "I have more fun than most doctors. If you told me I had to retire to a golf course, it'd be a sure way to keep me in practice."



Mike Hildebrandt, M.D.: *"I tell my patients to keep balance in their lives, and that's what they see me doing, so I guess you could say I practice what I preach."*

The endangered Blandin turtle finds refuge on Ehlen's land. Geese and ducks raise families in nesting areas he creates. Ehlen counts nature among those under his care.

Small Is Beautiful

It's said medicine requires compulsive attention to detail. If true, then Darlene Anderson, M.D., has found her niche. The 46-year-old family practitioner at Worthington Speciality Clinic creates exquisitely detailed miniature scenes of bygone days and displays them in hand-crafted boxes.

An attic scene, circa early 1900s, contains junk a family might have stored there: rickety screens, galoshes and hats, luggage and furniture, some of which Anderson makes from scratch out of metal, wood, cloth, old bits of ivory, and glass.

Cafés shaped like airplanes were popular in California in the 1920s. Anderson's miniature plane-café is so detailed it has cat scratches on the screen door and a teenager's love declaration carved into the front steps. You need a magnifying glass to appreciate some of the detail. Sun-faded paint peels at different rates on each side of the café's exterior. Moss grows on the north side. Open the café's tiny trash can and get a whiff of garbage. Anderson simulates with cod liver oil.

Imagine the challenge of making a piece of furniture, then imagine making it in miniature. Anderson's 18th-

century Windsor writing desk is about three inches tall and is made of 50 pieces of wood she turned on a lathe. Its two desk drawers are less than an eighth of an inch in size. Some of the dovetails (corner joints) are three one-thousandths of an inch.

"Creating miniatures is relaxing," Anderson says. "I can come home with a bad headache, and if I concentrate on something minute, pretty soon the headache goes away."

Fiddlin' Around

"Man, that was a really good time," is the finest compliment you can pay Mike Hildebrandt, M.D., a family practitioner at Faribault Clinic. An accomplished fiddle player, Hildebrandt and his band are cofounders and regular musical guests of a Prairie Home Companion-style musical variety show called "Over and Back." The show's name is a basketball metaphor for life—you can look back a little but you have to keep your eyes on the present.

"I was making music long before I practiced medicine," says Hildebrandt. "My partners are understanding about my sometimes having to be away. I could never have pursued my music in solo practice."

Hildebrandt and his band recently cut their first CD, "Foretaste of the Feast," an appealing assortment of familiar religious hymns. Meanwhile, on stage at the "Over and Back" variety show, Hildebrandt and the boys kick out heel-stompin', hoedown bluegrass that brings smiles and claps from a full house of 350. The curtain rises four times each year to Keillor-esque skits, special guests, and light humor seasoned with a dash of the philosophical. Money raised goes to a variety of charities.

Music makes Hildebrandt a better doctor, he says. "It keeps medicine from being routine and helps me keep my edge. Patients get a kick out of seeing me in a different role and joke about my 'fiddlin' around.' I tell my patients to keep balance in their lives, and that's what they see me doing, so I guess you could say I practice what I preach."

Taking Aim

When Steve Winselman, M.D., isn't focusing his attention on a patient at Allina's Family Practice Clinic in Cambridge, he's zeroing in on clay pigeons traveling 40 miles per hour in the sights of his custom-fitted Kreighthoff 12-gauge.

Winselman, 40, is a nationally ranked trapshooter. He competes nationwide, has won several trophies, and earned the highest class rating possible from the American Trapshooters Association. His personal best: hitting 199 of 200 targets.

"Learning to shoot traps is like learning to be a doctor," Winselman says. "It takes time and money." He likens his practice regimen to Olympic training. Every week, he takes aim at 250 to 500 targets at a cost of \$150 to \$200. He's coached by a trapshooting Hall of Famer. His Kreighoff is one of the best available—worth \$12,000. "It does get to be an expensive hobby," he says. "But like any hobby, you either love it or leave it."

Beauty in a Bottle

William Schoenwetter, M.D., found himself sitting in the car reading medical journals while his wife shopped for antiques. "I decided I'd better collect something, too," says the Park Nicollet allergist. He chose antique baby bottles. "They're rare and kind of pretty," he says.

Two of his bottles from the 1850s are old for baby bottles, which were not made in earnest until the late

1700s. He's found many of his two dozen bottles at what he calls "not your finest antique stores." Some, like the flask baby bottle, look laboratory-like, with glass tubing sticking out of a cork in the top. Then there's the fat and round turtle bottle, the submarine bottle, the double-ender, and a flat bottle that rests on baby's tummy so mom can churn butter or stir the kettle.

"I'm a pack rat," Schoenwetter admits. Besides baby bottles, he collects bloodletters, tonsil guillotines, ivory tongue depressors, and other antique medical instruments. Schoenwetter's two Civil War-era bloodletters are oddly shaped knives that efficiently make eight cuts with one "slash." George Washington, he notes, bled to death when his doctors gave him a bloodletting to cure his sore throat.

MM

Howard Bell is a medical writer living in Onalaska, Wisconsin.

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Sense of Grace

By Laura J. Albrecht

A Dallas physician savors life after nearly dying on Mount Everest.



PHOTOGRAPH BY JON KRAKAUER

The night was magnificent at 26,100 feet. A day of blistering winds had ended. The temperature was an invigorating 10 degrees below zero. The stars were close enough to grab and pocket. A heavenly moment to head to the top of the world. But in high-altitude climbing, the game can change within seconds.

On May 10, 1996, nine climbers, including two world-class guides, perished in the Death Zone (above 25,000 feet) on Mount Everest. One climber—Dallas pathologist Beck Weathers, M.D.—was given a second chance. His return from the darkness of near-death remains a marvel even today to those in the climbing and medical community. And to himself.

"I managed to get a pretty good wake-up call," says Weathers. "It causes you to think through what is really important in your life. It's not that you don't know what those values are, but it's that you haven't stopped long enough to question what you are doing. You somehow think that those people and those moments will still be there later when you have time to slow down."

When he left for the chance to climb the world's highest peak, Weathers didn't know what life would be like upon his return to Texas. He had pushed his family and colleagues so far away he wasn't sure if they would be around. "There are no easy marriages," he says. "It's not enough just to love someone. You have to be there when they need you."

Weathers thought his final climb would take pressure off his family. "I don't think I realized my personal relationships were so far gone. Win, lose, or draw on my Everest climb, I thought it being my last would relieve the enormous pressure on my family. The only problem is by that point, they didn't believe it."

Like high-altitude climbers, physicians are not immune to the drive and dedication that can consume them. "It's important as doctors that we don't lose track that we are healers," Weathers says. "I traveled all over the world seeking something to make me whole and all along it was in my own backyard. In the end, the only thing that matters are the people you hold in your heart and those who hold you in theirs."

Higher and Higher

The trick to reaching the 29,028-foot summit of Mount Everest, located in the Himalayas that separate China

and Nepal, is fairly straightforward. Through a series of five camps on the mountain, climbers move themselves up and down over a period of several weeks, allowing their bodies to adjust to headaches, nausea, cough, and

the ever-present cold. In addition, there is the danger of frostbite, pulmonary edema, or cerebral edema. And then there is the possibility of falling off the face of the mountain.

"You are gradually convincing your body you are not kidding," Weathers explains. "In fact, you are going to take it higher and higher and higher and it had better get used to the idea. It is amazing how the body is able to adapt."

Just outside their front tent flaps at Everest Base Camp (17,600 feet), climbers are introduced to the infamous Khumbu Ice Fall.

It's a treacherous front yard where ice and snow funnel into a valley from three peaks—Everest, Lhotse, and Nuptse. To cross the crevasses, one to four aluminum ladders are lashed together, providing a bridge to the other side. Climbers can only imagine that somewhere below a solid surface exists.

"It's a supreme act of faith the first time you step out on one of those ladders with a full pack and steel crampons," Weathers says. "There is nothing but air underneath you, and anxiety transforms into stark terror."

The use of oxygen comes into play once climbers have reached Camp 4 (26,000 feet) at the South Col. Weathers calls the High Camp "one of the most miserable places on Earth." Once there, climbers find a landscape of rocks and hard ice sprinkled with thousands of spent oxygen bottles left from previous expeditions. Add to that the occasional body of a climber whose final resting place is where he or she struggled for the last gulp of air.

"As you move into the Death Zone your body is consuming itself at an enormous pace," Weathers says. "You are not able to eat, drink, or sleep." From this point, climbers make their final push to the summit.

"Climbers say fear brings caution," he says. "Being afraid is not the issue. It's, do you still function while you are afraid?"

Perversion of Mother Nature

The wind was blowing fairly hard when Weathers and his teammates reached Camp 4.

They were looking forward to the confines of their

I traveled all over the world seeking something to make me whole and all along it was in my own backyard. In the end, the only thing that matters are the people you hold in your heart and those who hold you in theirs.

tents before the final quest to the summit. Weathers, tired from a full day of climbing, crawled into his tent and was confident that after a day of rest he would soon be at the highest point in the world.

"Then Mother Nature did something that was rather perverse," Weathers says. "The wind stopped." It was then that Adventure Consultants guide Rob Hall yelled into the tents, "Guys, we are rolling."

The team was on its way. With the aid of oxygen, Weathers resorted to his "zombie routine." To make the labored hike (in which every step and breath is a struggle) bearable, he turned his mind off. Literally "zoning out," he would watch the heels of the climber in front of him. Forward progress was gradual, and it worked well going straight up. But Weathers realized he had a problem when he began a traverse at the bottom of the Southeast Ridge. His vision was becoming blurred.

He had undergone radial keratotomy (RK) surgery to be safer in the mountains, but what he didn't know was that some RK surgery patients have unexplained vision shifts at high altitude. His right eye was completely blurred and his left eye was not much better. He realized he had lost his depth perception and could climb no higher. Weathers relayed his problem to his guide, who told him to stay put and he

would guide him down after the rest of the team had reached the summit.

Weathers made a promise he now calls "stupid." "I promised [Rob] Hall I would stick to this spot. It never occurred to me that he would never come back." Hall died high on the mountain after talking to his pregnant wife via a phone patch from New Zealand.

"I stayed too long at the party," says Weathers, who was stranded at 22,000 feet.

Cheating Death

Help did come to the mountain. But not before a living and dying hell erupted.

Another guide, Australian Mike Groom, arrived, and Weathers's team began the descent to Camp 4. They made it to the South Col and were "home free," only a few hundred yards from camp, says Weathers.

"About this time, we heard this sound that was like a squadron of 747s coming in on you," he recalls. The storm that had been below was now roaring up the Lhotse face, compressing over the South Col and slamming into the climbers. They were caged in a whiteout with winds blowing at 70 knots. Even with the temperatures dropping to 50 below zero, Weathers says, "It didn't seem that awful." He knew camp was "right

I felt like I was floating and someone was pulling me across the ice. I was not cold anymore, and even in my state, I recognized this was probably not a good thing.

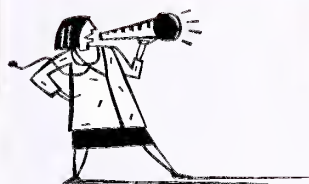


Rescued from the jaws of Everest, Dallas pathologist Beck Weathers has returned to family, friends, and medical practice.

PHOTOGRAPH BY LAURA J. ALBRECHT, TEXAS MEDICINE

WEATHERS *continued on page 49*

ANNOUNCEMENTS



Dr. Jaspers is Family Physician of the Year

Anthony C. Jaspers, M.D., a family physician from Lake Crystal and an alternate delegate to the American Medical Association, was named 1998 Minnesota Family Physician of the Year by the Minnesota Academy of Family Physicians. Jaspers practices at Mankato Clinic and Immanuel-St. Joseph's Hospital in Mankato. The award honors a family physician for compassionate, comprehensive, and caring medical services; involvement in community affairs; and service as a role model to the community, health care professionals, family practice residents, and medical students. Jaspers has been active for 20 years as a high school team physician, medical director of the Lake Crystal Ambulance crew, chair of a community health network, an officer with the Lake Crystal Lions Club, and a member of the Lake Crystal Chamber of Commerce. Jaspers also has served the MAFP, the American Academy of Family Physicians, and the MMA in a number of capacities.

Patient Protection Legislation Tops Congressional Agenda

While concerns about the way HMOs may be affecting patient care aren't new to consumer groups, physicians, and other health care provider groups, they've suddenly taken center stage in Washington—a few short months before mid-term elections.

The first and most sweeping patient protection legislation introduced this year is the Patients' Bill of Rights Act of 1998. This proposal has been endorsed by the American Medical Association, and the MMA strongly favors most of its provisions. Many aspects of the bill, such as a prohibition on gag clauses and a "prudent layperson" standard for emergency care, have already been enacted in Minnesota with the MMA's help.

Introduced by Democrats and supported by a handful of Republicans, such as Rep. Greg Ganske, M.D., R-Iowa, the Patients' Bill of Rights continues to be opposed by the Republican leadership in both the House and Senate. In a July 13 meeting with MMA CEO Paul S. Sanders, M.D., Ganske, a plastic surgeon, expressed his desire to gain the MMA's stamp of approval for the measure. Its most controversial provision would narrow the ERISA preemption to allow patients to sue health plans and self-insured plans.

"The unanswered question," said David Renner, MMA director of state and federal legislation, "is will this help patients hold health plans accountable,

or will it result in increased frivolous lawsuits, malpractice premiums, and health care costs?" The ERISA revision, which is not a part of other patients' rights measures under discussion in Congress, is vigorously opposed by Midwest Medical Insurance Company, the Buyers' Health Care Action Group, and the Minnesota Council of Health Plans.

The MMA is continuing to evaluate all legislative proposals—including the one supported by House Republican leaders—in developing a policy position. That "middle of the road" proposal is intended as a compromise between the Democrats' bill and the softer one proposed by Senate Republican leaders. Offered by a coalition of 25

nonprofit HMOs, including Minnesota-based HealthPartners, the bill championed by House Republicans includes most provisions set forth in the Patients' Bill of Rights Act—with one major exception: the authorization of lawsuits against HMOs. Like the Patients' Bill of Rights, it would apply to 150 million health care consumers, while the plan offered by Senate Republican leaders would apply only to the roughly 50 million consumers now covered by federally regulated health plans.

"This issue has become very partisan in the past three weeks, to the point where nothing may pass," Renner said. "This would be the worst outcome. Unless Congress adopts some overall patient protections, state laws like we have passed in Minnesota are preempted by ERISA."



VIEWPOINT

Kent S. Wilson, M.D.
MMA President



Election Campaigns Offer Advocacy Opportunities

The 1999 legislative session seems far away, but now is the time to help choose the right players and build strong relationships with your legislators. This fall, the state attorney general, the governor, and members of both the state and U.S. houses of representatives are up for election. You have an opportunity to help elect candidates who believe in our most important goals.

When state candidates come to your door asking for support, ask where they stand on the provider tax. Do they support repeal? Do they think a tobacco tax hike should replace it? If not, what tax would be better—an increase in the income tax, general sales tax, tobacco tax, or alcohol tax?

The main obstacle to repealing the provider tax has been finding money to replace the approximately \$150 million a year that it contributes to the Health Care Access Fund. Now \$5.3 billion in tobacco settlement money, available for legislative appropriation over the next 25 years, offers an opportunity to fund health care for the uninsured in a more appropriate way. Sen. Doug Johnson, DFL-Tower, one of the gubernatorial candidates, has

already made such a proposal, and the MEDPAC-endorsed candidate, Norm Coleman, has come out in favor of repealing the provider tax.

We expect to see a scramble over the settlement money. The MMA will insist that the funds be spent for health-related purposes, such as funding health care for the uninsured, smoking cessation programs, and counter advertising. It's important to elect legislators who agree.

Another key question is whether candidates oppose extending the statute of limitations for medical malpractice cases. Last session, the Minnesota Trial Lawyers Association tried to pass legislation to extend the statute from the present two years from the date of harm to two years from the discovery of harm with a cap of six years. We expect the lawyers to be back in 1999.

As you ask questions, you may well enter into a dialogue with the candidates, giving you a chance to explain the MMA position and possibly to sway their opinions. Generally, candidates are more receptive to your arguments before rather than after the election. The August *Physician Advocate* includes a handy clip-and-save section of questions and talking points to assist you. Or you

may call the MMA's Center for Physician Advocacy at 888/662-6774.

Identifying the right candidates is the first step. The next step—working to get them elected—serves two important purposes. First, you'll have more impact on the election than just casting your ballot. And, you have a chance to build a close relationship with your legislator.

Legislators listen to constituents they know, the ones who worked on their campaigns by door knocking, attending or hosting fundraisers, and distributing literature. The chiropractors have been very active in the legislative process, and this works to their advantage.

Contributing to MEDPAC is another way to affect the elections. Last month, you received a letter from MEDPAC Board Chair Anthony Jaspers, M.D., encouraging you to join MEDPAC and support the campaigns of candidates in both parties who are willing to listen to us and to work for legislation that improves the health of our communities.

Let's start now to build the basis for effective grassroots advocacy in 1999. ■

'Medical Information in the New Millennium' Is October 7

The educational program "Medical Information in the New Millennium" will kick off this year's MMA Annual Meeting October 7. The seminar will cover a range of topics, including year 2000 problems and solutions, the Internet as a diagnostic and treatment tool, computerized medical records, and electronic physician credentialing and

profiling. It will run from 12:30 p.m. to 5:30 p.m. at the Radisson Hotel in St. Paul; the MMA Member Reception will follow. A complimentary box lunch will be provided at the start of the program. There is no charge to MMA members, but space is limited, so reserve your place now. Call Vicki Westling at 612/378-1875 or 800/DIAL-MMA. ■

Medical Marriages Expert to Speak at Annual Meeting

A nationally renowned author and expert on family therapy will speak about the special challenges of medical marriages at the MMA Annual Meeting October 7. This year's annual meeting is the first to include a joint event, sponsored by the MMA and the MMA Alliance. William J. Doherty, Ph.D., is director of the University of Minnesota's marriage and family therapy program, as well as a professor in the Department of Family Social Science and a lecturer in the Department of Family Practice and Com-

munity Health. He is the author of numerous books, including last year's *The Intentional Family: How to Build Family Ties in Our Modern World*, published by Addison-Wesley, and more than 100 articles and reviews. Doherty currently serves on the editorial boards of several journals, including the *American Journal of Family Therapy*, the *Journal of Marital and Family Therapy*, and the *Journal of Family Psychology*. The medical marriages presentation will be at 7 p.m., following the MMA reception. ■

Tobacco Regulation Symposium to Be Held in Minneapolis

A team of national health, law, and policy experts—including MMA physician Richard D. Hurt, M.D.—will lead the daylong symposium Tobacco Regulation: The Convergence of Law, Medicine, & Public Health in Minneapolis next month. The event, hosted by the Center for Health Law & Policy and the Centers for Law & Leadership at the William Mitchell College of Law, is slated for September 25 at the Minneapolis Regal Hotel. The MMA is a joint CME sponsor of this event.

The symposium will cover a range of topics, including the role of

medicine and public health in influencing tobacco regulation policy at the state and national levels. Other experts scheduled to speak at the event are attorney Michael Ciresi, Blue Cross and Blue Shield of Minnesota CEO Andrew Czajkowski, former U.S. Sen. Dave Durenberger, state epidemiologist Michael Osterholm, Ph.D., and Jerome Kassirer, M.D., editor of the *New England Journal of Medicine*. For more information, or to register for the symposium, call Colleen at William Mitchell College of Law at 651/290-6434. ■

Dr. Lurie Named to U.S. HHS Post

Nicole Lurie, M.D., a Minneapolis physician and researcher known for her studies of health care access and quality issues—including "Are All Health Plans Created Equal? The Physician's View," published in *JAMA* in September 1997—has accepted a key post with the U.S. Department of Health and Human Services.

Lurie has been named principal deputy assistant secretary for health at HHS, where she will work closely with Secretary of Health and Human Services Donna Shalala and U.S. Surgeon General David Satcher, M.D. She will play a leading role in a national initiative focused on lessening disparities in access to health care, particularly with respect to minority populations.

A staff physician at Hennepin County Medical Center, Lurie is also a professor of medicine, family practice, and public health at the University of Minnesota. She is director of Primary Care Education and Research, and last year became director of the Department of Medicine's division of internal medicine. Lurie will begin work in her new position September 1. Lurie's husband, Jesse Goodman, M.D., a U of M professor of medicine in infectious diseases, will become special assistant for infectious diseases policy in the commissioner's office of the Food and Drug Administration. ■

MMA ANNUAL MEETING

Tentative Schedule

October 7-9, 1998

Radisson Hotel, St. Paul

WEDNESDAY, OCTOBER 7

9 a.m. – 6 p.m.

General Registration

10 a.m. – 12 noon

Board of Trustees Meeting

12 noon – 2 p.m.

MEDPAC Annual Meeting

12:30 p.m. – 5:30 p.m.

Educational Program: "Medical Information in the New Millennium"

6 p.m. – 7 p.m.

Welcome Reception

7 p.m. – 8 p.m.

Joint Event with Alliance

Speaker: William J. Doherty, Ph.D.
"Medical Marriages"

THURSDAY, OCTOBER 8

6:30 a.m. – 8 a.m.

Continental Breakfast Buffet

6:30 a.m. – 5 p.m.

General Registration

7 a.m. – 8:45 a.m.

Component Society Caucuses:

Ramsey

Hennepin

Greater Minnesota

8 a.m. – 8:45 a.m.

Media Briefing

9 a.m. – 10:30 a.m.

House of Delegates (Session I)

10 a.m. – 2 p.m.

Alliance Meeting and Lunch

10:30 a.m. – 11:15 a.m.

AMA Open Forum

11:15 a.m. – 12:45 p.m.

Awards Lunch

1 p.m. – 3:30 p.m.

Reference Committee Open Hearings

3:30 p.m. – until completion

Reference Committee Executive Session

4:30 p.m. – 6 p.m.

Organized Medical Staff Section

5 p.m. – 6 p.m.

AMA Delegation Meeting

6:30 p.m. – 7 p.m.

Pre-Inaugural Reception

7 p.m. – 9 p.m.

President's Inaugural Dinner & Festivities

9 p.m.

Afterglow Reception

FRIDAY, OCTOBER 9

7 a.m. – 8:30 a.m.

Continental Breakfast Buffet

7 a.m. – 8 a.m.

Medical Student Section

7 a.m. – 8 a.m.

Young Physicians Section

7 a.m. – 8:30 a.m.

Board of Trustees Breakfast Meeting

8:30 a.m. – 12 noon

General Registration

8:30 a.m. – 10:15 a.m.

Component Society Caucuses:
Ramsey & Hennepin
Greater Minnesota

10:30 a.m. – 3 p.m.

(includes lunch)

House of Delegates (Session II)

12 noon

Spouse Lunch

3 p.m. – 3:30 p.m.

Board of Trustees Organizational Meeting

Please watch for future updates.

NEWS DIGEST

*People and Places
making medical news*



People & Places

HealthSystem Minnesota has selected David Wessner to succeed James Reinertsen, M.D., as the organization's president and chief executive officer. Wessner has been chief operating officer of the health system since January, when Reinertsen announced he was leaving to head CareGroup Inc. in Boston. Wessner joined HealthSystem Minnesota in 1994 as executive vice president, directing quality and cost-containment initiatives. He assumed his new duties in July.

Charles E. Crutchfield III, M.D., became the first African-American dermatologist to practice in Minnesota when he joined Dermatology Consultants, P.A., in July. He carries on a tradition of medical care in the Twin Cities: his father, C.E. Crutchfield Sr., M.D., is an ob/gyn in St. Paul, and his mother, Susan Crutchfield-Mitsch, M.D., is a family practitioner with Hennepin Faculty Associates and medical director of Metropolitan Health Plan in Minneapolis. Crutchfield will also be teaching medical students and residents as a clinical assistant professor of dermatology at the University of Minnesota. He was recently honored with the 1998 Minnesota Medical Foundation's Distinguished Teacher of the Year Award.

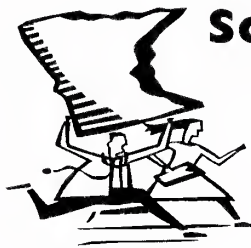
Drs. David Palmer and Jon Stratte received Physician Recognition Awards for their outstanding service to their communities at the

Lakeview Medical Staff annual meeting in July. Palmer, an orthopedic surgeon in Stillwater for nearly 22 years, is president of the Minnesota Orthopedic Society. He volunteers his surgical services at Shriner's Hospital, is a Rotarian, and has done volunteer work in Bhutan and Afghanistan. Stratte, who has practiced family medicine in Stillwater for 34 years, has been director of Lakeview's hospice program for the last 10 years.

Faribault Regional Center, the state's oldest mental health institution, has closed, with the center's last five clients moving into community homes. Fewer than 100 people with mental impairments are now living in state regional treatment centers. The state Legislature authorized the center in 1879, and the

institution's population peaked in the 1950s with 3,355 residents.

Mayo Clinic has announced plans to publish a new series of soft-cover books on specific medical conditions. The first will be about arthritis, offering advice and answers for the 40 million Americans who have the disease. Subsequent books will cover high blood pressure and chronic pain, and other topics under consideration include stomach problems and diabetes. "People with chronic conditions want to learn everything they can about what they can do to feel better," says David E. Larson, M.D., medical director for Mayo's consumer publishing activities. "Our goal is to help them gain knowledge so they can improve their lifestyles and live more productively and comfortably." ■



Socioeconomics

government is the largest employer in Minnesota, covering 153,000 workers and their dependents. Rates for private employers are often similar to those paid by the state.

Despite premium increases of 4 percent in 1997, the state's health plans lost millions on operations because of rising medical costs, and health plans say medical costs will continue to increase. Baby boomers are aging and are requiring more health care services, said Allina spokesperson Sarah Stoesz in a Twin

Health Insurance Premiums Going Up in 1999

Health care premiums for Minnesota state employees will increase 13.2 percent for 1999, signaling the likelihood of significant premium increases in the private sector. State

Cities-based *Star Tribune* article. Drug costs, technological innovations, and specialty physician costs also drive the increases.

According to industry analyst **Allan Baumgarten's** ninth annual review of state HMOs released in June, Minnesota's 13 HMOs lost \$59.5 million on operations in 1997. It was the first time in 10 years that the state's nonprofit HMOs as a group lost money.

Corrections Department Moves to Managed Care

The Minnesota Corrections Department has moved to managed care for its inmate health care services, saving taxpayers about \$2 million the first year, said **Carol Sheehan**, director of health services for the department, in a *St. Paul Pioneer Press* article. The department is working with **Correction Medical Services** in Missouri, which has formed a partnership with **Allina**.

Previously, the department negotiated almost 100 individual contracts with providers to deliver services, such as specialty and primary care, pharmacy, and laboratory work. "Now we have one provider, and it will negotiate on our behalf," said Sheehan.

Under the new system, inmates requiring hospitalization will go to either **Mercy Hospital** in Coon Rapids or **St. Francis Regional Medical Center** in Shakopee, where they will be housed in private, locked rooms separate from the general patient population. Previously, inmates were taken to **Regions Hospital** in St. Paul, where they stayed in a 15-patient locked unit.

Blue Cross Won't Bid on BHCAG Contract

Blue Cross and **Blue Shield of Minnesota** is the second major health plan to decide not to bid on a contract to administer the **Buyers Health Care Action Group (BHCAG)** business

in the year 2000. **HealthPartners**, which currently administers the BHCAG plan, decided it would no longer work with the group after 1999. **Mark Banks**, BCBSM president and chief operating officer, said in a *St. Paul Pioneer Press* article that BHCAG is at its heart another health plan, and thus a competitor to BCBSM.

State Will No Longer Invest in Tobacco Stocks

Prompted by lawsuits potentially affecting the financial stability of tobacco companies, the **Minnesota Board of Investment** has decided to stop investing in companies that derive more than 15 percent of their revenues from tobacco products. The board, chaired by Gov. **Arne Carlson**, will also consider whether to divest itself of its \$310 million in tobacco holdings.

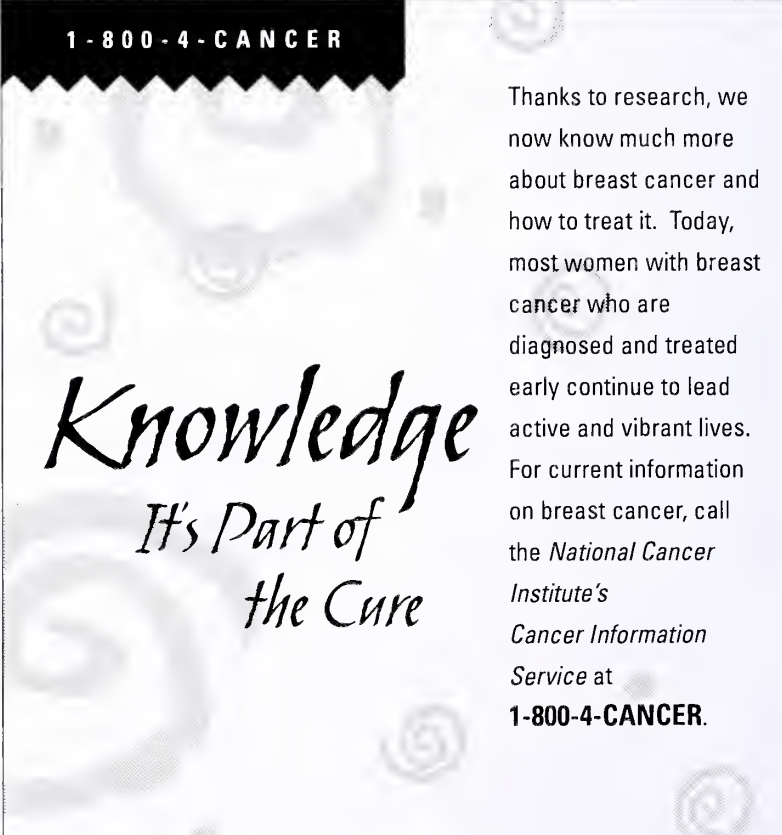
"It doesn't make much sense for

us to invest pension funds in companies whose stock is so volatile, and [for which] there is no light in the future," said Secretary of State **Joan Grove**, who led the move to limit new acquisitions. The tobacco industry recently settled a court case with Minnesota in which it agreed to pay the state \$6.1 billion over 25 years, and the industry faces other lawsuits, as well as pending federal legislation that could involve a \$516 billion payment over 25 years.

3M Buying Pace Health Management Systems

3M Company's Health Information Systems unit, based in Salt Lake City, has agreed to acquire **Pace Health Management Systems Inc.**, based in West Des Moines, Iowa, for about \$6.1 million. The price includes about \$4.75 million in cash plus the assumption of selected liabilities. ➡

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Both companies develop clinical software and information systems. PACE specializes in clinical documentation and case management products.

Pharmacies Can Now Sell Syringes to Help Prevent AIDS

More than 400 pharmacies statewide are participating in an AIDS prevention program that allows them to sell up to 10 syringes with no questions asked. The goal of the program, which began in July under a law passed in 1997, is to decrease HIV infection among IV drug users by making clean needles more available. Under the previous law, pharmacists had to make sure buyers would be using syringes for legal purposes.

For the names of participating pharmacies, call the Minnesota AIDS Project at 612/373-AIDS (373-2437) or 800/248-AIDS. ■



Research & Innovations

Vaccine Testing Gets Booster from 'U'

A new technique to visualize immune cell interactions could cut testing times for new vaccines from several weeks to 48 hours. Developed by researchers at the University of Minnesota, the University of Glasgow, and Dartmouth Medical College, the technique allows researchers to see—literally—if a vaccine is working in the early stages of the process rather than waiting several weeks for antibodies to show up in the bloodstream. The research ap-

peared in the July 3 *Science*.

"We now have some powerful new tools to study vaccines and to make them more effective," said lead researcher Marc Jenkins, Ph.D., an associate professor of microbiology at the University of Minnesota.

The technique is based on the fact that certain immune cells must "talk" to each other in the early stages of vaccination. But, since a given vaccine will be recognized by only about one in a million immune cells, it's been difficult for researchers to observe that interaction. Working with mice, Jenkins and his colleagues devised dyes that stuck only to immune cells that recognized the vaccine given to the mice. Outfitted with these markers, the cells and their interactions became visible under the microscope. ➡



Rates, Trends & Data

Minneapolis Gets Mixed Grades on Health Report Card

Minneapolis ranks better than most large cities in such areas as overall death rates and teen pregnancy, but the city's rates of chlamydia and smoking during pregnancy are high compared with other urban areas, according to a report released by the Minneapolis Department of Health in late June. The report is based on a study by the Chicago Department of Health ranking rates of communicable diseases, death rates, and maternal and child health among 46 urban areas.

Minneapolis had the lowest death rate from heart disease and one of the lowest death rates from cancer (38th out of 46). However, in addition to the high rate of chlamydia, Minneapolis had the highest rate of gonorrhea infection among African Americans, and it ranked 38th for adequate prenatal care. Minneapolis also has a high suicide rate, ranking 15th of the 46 cities.

Minneapolis ranks about average for its rates of tuberculosis, deaths from breast cancer, and infant deaths.

Fewer Teens Getting Pregnant

Fewer teens are getting pregnant in every state reporting data, according to a report from the Centers for Disease Control and Prevention that includes Minnesota plus 41 other

states and the District of Columbia. Officials attribute the decrease to greater use of birth control and less sex, and also suggest that an improved economy may be giving teens more hope for the future and more motivation to avoid getting pregnant.

Abortion rates have dropped in 40 reporting states—by 15 percent or more in 25 of the states. Researchers are not sure why abortion rates are falling, but they speculate a greater acceptance of teen birth and tightened access to abortions.

Infant Mortality Dropped 30 Percent from 1980 to '94

The death rate for U.S. infants aged 4 weeks to 1 year dropped 30 percent from 1980 to 1994, according to a report from the Centers for Disease Control and Prevention. The CDC attributes much of the decline to increased awareness of Sudden Infant Death Syndrome. ■

'U' Physicians to Test Potential Alternative to Heart Transplant

The National Institutes of Health has awarded physicians at the Uni-

versity of Minnesota one of 20 national grants to investigate an implantable device that takes over the pumping function of the heart for

patients dying of heart failure who are not candidates for a transplant. **Soon Park, M.D.**, assistant professor of surgery, and **Leslie Miller, M.D.**, professor of medicine, are lead investigators of the study, which will be conducted at Fairview-University Medical Center. Patients will receive either standard medical equipment or a device called Heart-Mate® VE. If proven successful, the two-pound, fist-sized, battery-driven device would be readily available for many patients who suffer chronic heart failure, and it may be an alternative to heart transplant.

HCMC Plans to Test New Trauma Drug

Physicians at Hennepin County Medical Center hope to study a possibly life-saving but experimental drug on trauma patients who may be injured too seriously to give their consent. To win federal approval for the drug trial, **Michael West, M.D., Ph.D.**, director of the surgical intensive care unit, and his colleagues held a public meeting in June to discuss the experiment. The study would be one of the first in Minnesota under new federal rules that allow waivers of consent for experimental treatments in emergencies. The drug, called Hu23F2G, will be tested at 11 other trauma centers nationwide.

The drug prevents white blood cells from attacking vital organs, a sometimes fatal result of injuries. Hu23F2G must be given to patients within three hours of a traumatic injury, when patients usually cannot give consent. The medical staff would use the waiver when they can't find a relative to give permission, West said.

Some observers are uneasy about the experiment. "I just happen to think we may have gone too quickly away from the requirement of informed consent," said **Jeffrey Kahn, Ph.D.**, director of the University of Minnesota Center for Bioethics, in a Twin Cities-based *Star Tribune* article. ■

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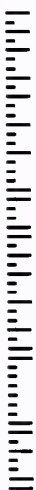
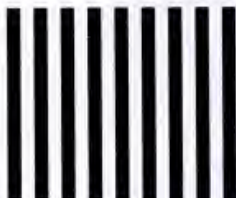
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* New England Journal of Medicine, February 1991

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Minnesota Responds to Fetal Alcohol Syndrome

Following recommendations of the Governor's Task Force on Fetal Alcohol Syndrome, the state Legislature has funded a number of initiatives to prevent and treat FAS/FAE.

Richard Lussky, M.D.

Editor's Note: FAS and FAE are serious problems in every socioeconomic group, not only among people living in poverty. FAS is not easy to diagnose in the 12 to 24 hours after birth, especially if you don't even consider it as a possibility. Screening during pregnancy for every woman is a must, but it may be too late. We need to foster a culture of alcohol-free pregnancies. You can start in your own practice, family, and social circles. Educate all girls and woman from age 12 on. Facilitate alcohol-free choices at all community and family gatherings. Consider volunteering for action, and attend an FAS/FAE CME program whether you are a family physician, pediatrician, internist, or orthopedic surgeon. Let's not miss any opportunities to prevent and diagnose FAS and FAE.

—Barbara Yawn, M.D., M.Sc.,
Series Editor

"I am convinced that the numbers of children born with fetal alcohol syndrome and fetal alcohol effects is a crisis affecting each and every one of us. It is a silent crisis that we as a state, and as a nation, have failed to make a priority."

With that conviction, Minnesota's first lady Susan Carlson, co-chair of the Governor's Task Force on Fetal Alcohol Syndrome, launched a major public health initiative on fetal alcohol syndrome (FAS) and fetal alcohol effects (FAE). During the 1998 legislative session, the task force

presented its findings to the Minnesota Legislature, which subsequently funded all recommendations.

FAS Sequelae

The first full description of FAS didn't appear until 1973.¹ However, concerns related to the use of alcohol during pregnancy date to biblical times.² In the "Problemata," Aristotle stated, "Foolish, drunk ... women for the most part bring forth children like unto themselves, difficult and listless."³

FAS has three cardinal features: 1) growth retardation of prenatal onset that continues postnatally; 2) central nervous system dysfunction that includes microcephaly, mental retardation with an average IQ of 65 to 70, and long-term neurodevelopmental and behavioral sequelae; and 3) craniofacial malformations consisting of short palpebral fissures (secondary to ocular hypoplasia), long and smooth philtrum, thin vermilion border, flattened midface, and micrognathia.⁴ Additional sequelae include a 57% rate of congenital heart defects⁵ and a high rate of alcohol withdrawal symptoms. The obstetrical complications of alcohol abuse include an increased rate of spontaneous abortion, stillbirth, placental abruption, and premature delivery.

The neurodevelopmental and behavioral sequelae are some of the most devastating and result in life-long challenges. These children and adults have learning disabilities, poor

social skills, behavioral disorders (including poor impulse control and hyperactivity), and difficulty thinking abstractly and understanding the consequences of their actions. They have impaired daily living skills and frequent academic setbacks, culminating in a limited ability to live independently and maintain employment.

Alcohol Use in Minnesota

Nearly one in five Minnesota women aged 18 to 44 years (18.2%) reports frequent drinking (an average of at least one drink per day and/or five or more drinks at any one time in the previous month), as compared with the national median of 11.5%.⁷ Approximately 11% of Minnesota women aged 20 to 34 years have had alcohol-related problems or dependency.⁶

The Department of Human Services conducted a survey in 1989 of 1,639 pregnant women and found that 41% of those aged 18 to 40 years drank at least once during their pregnancy.⁷ Given this information, 27,000 Minnesota babies each year would have some degree of prenatal alcohol exposure.

Incidence of FAS/FAE

Nationwide, the incidence of FAS is estimated to be 1.9 per 1,000 live births; the incidence of FAE is estimated at 3 to 5 per 1,000 live births, resulting in the birth of approximately 25,000 affected children each year.⁸ The rate of FAS occurrence alone is three times that of Down syndrome

The Fetal Alcohol Syndrome Task Force

Gov. Arne Carlson created the Fetal Alcohol Syndrome Task Force in 1997 to accomplish three goals:

1. assess the extent of the public health issue posed by prenatal alcohol exposure;

2. make recommendations to the governor and the Legislature for a comprehensive and long-term approach to prevent and reduce harm from alcohol-related birth defects; and

3. raise public awareness of FAS and FAE through public hearings.

The task force, co-chaired by Minnesota first lady Susan Carlson and Hennepin County Juvenile Court Judge Joan Lancaster, included individuals from health care, public health, the Legislature, the court system, community organizations that advocate for infants and disabled individuals, the broadcasting industry, chemical dependency organizations, the legal profession, children and family services, charitable foundations, the health insurance industry, public schools, and birth and foster families. Agency liaisons to the task force included representatives from the state departments of Corrections; Health; Public Safety; Children, Families and Learning; and Human Services, plus the governor's office.

The group met monthly during 1997, including a full-day retreat. Two subcommittees worked concurrently in the areas of prevention and intervention. In addition, the task force traveled the state, holding nine public hearings. These hearings were instrumental in improving access to the task force and providing statewide community input.

and eight times that of spina bifida. As many as 800 children are born each year in Minnesota with either FAS or FAE.⁹ The human costs of prenatal alcohol exposure are great, as are the economic costs. In 1991 FAS cost Minnesota more than \$44 million.¹⁰

The FAS Task Force

It was against this backdrop that Gov. Arne Carlson created the Fetal Alcohol Syndrome Task Force in 1997, co-chaired by first lady Susan Carlson and Hennepin County Juvenile Court Judge Joan Lancaster. Through their work in the courts, both Susan Carlson and Lancaster had witnessed the effects of FAS/FAE on children, families, and the medical, educational, and social services of the state. They led the task force in its mission to define the problem, recommend a prevention program, and raise public awareness (see the sidebar).

Following are the task force's findings and recommendations and a description of the \$5 million in funding the 1998 Legislature authorized via the Omnibus Health and Human Services bill.

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LOW PUBLIC AWARENESS IMPEDES PREVENTION EFFORTS.

Recommendation: Minnesota needs ongoing state and local awareness campaigns, a central information source, and business partnerships to raise employee awareness. Funding: \$800,000 for an ongoing, high-profile public awareness campaign.

A LACK OF SOLID DATA MASKS THE FULL COSTS AND EXTENT OF THE PROBLEM.

Recommendation: Minnesota must learn the breadth and severity of the problem and estimate the monetary cost of fetal alcohol syndrome and fetal alcohol effects in the state. Funding: \$200,000 for a study of the incidence and prevalence of FAS and FAE in Minnesota.

ALCOHOL ADVERTISING OVERSHADOWS PUBLIC MESSAGES ABOUT RESPONSIBLE DRINKING.

Recommendation: Minnesota must engage the alcohol industry in prevention campaigns and ensure that high-impact warning messages are displayed wherever alcohol is served.

WIDESPREAD FAILURE TO WARN PREGNANT WOMEN ABOUT DRINKING AND IDENTIFY THOSE LIKELY TO DRINK PREVENTS WOMEN FROM GETTING HELP.

Recommendation: Minnesota must train professionals in health care and other fields to routinely screen pregnant women; it also must expand the options available to help women identified as likely to drink. Funding: \$850,000 for the expansion of treatment centers that serve pregnant women and women with children; \$800,000 for the expansion of maternal child substance abuse projects; and \$400,000 for intervention, treatment, and advocacy services to high-risk and chemically dependent women (Birth-to-3 Project).

A STAGGERING NUMBER OF CHILDREN ARE NOT DIAGNOSED AT ALL, DIAGNOSED LATE, OR MISDIAGNOSED.

Recommendation: Minnesota must develop a statewide diagnostic network and ensure that screening for fetal alcohol syndrome or effects happens in many agencies, programs,

and settings. Funding: \$400,000 for a statewide network of regional diagnostic centers.

THERE IS A DRAMATIC SHORTFALL IN SERVICES FOR THOSE WITH FETAL ALCOHOL SYNDROME OR EFFECTS.

Recommendation: Minnesota should fund pilot projects in schools, provide training and support for families of these children, and address fetal alcohol syndrome and effects in the justice system. Funding: \$850,000 for community coalitions for FAS prevention and intervention.

A CHILD'S CONDITION WORSENS WITHOUT TIMELY AND APPROPRIATE HELP.

Recommendation: Minnesota must evaluate and expand successful efforts to prevent other disabilities (secondary disabilities) that may arise as a result of fetal alcohol syndrome and effects. Funding: \$200,000 for the development of school-based curricula/best practices for educating individuals with FAS/FAE.

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What Physicians and Nurses Can Do

The Governor's Task Force on Fetal Alcohol Syndrome urges physicians and nurses to take the following steps to help prevent and diagnose FAS/FAE.

1. Be diligent in asking both biological parents about alcohol use. Use a screening tool to identify women who drink during pregnancy.
2. Participate in efforts to improve the identification of chemically dependent women and the provision of treatment for them.
3. Work to incorporate fetal alcohol syndrome information into basic academic curricula.
4. Discuss family planning with women who are of childbearing age and use alcohol.
5. Be more aware of fetal alcohol syndrome and effects and learn to recognize the signs early in a child's life. Become knowledgeable about prevention, intervention, and assistance resources.
6. Caution mothers to abstain from alcohol when they are nursing.
7. Educate clinicians who work with families, children, and women via continuing education programs.
8. Make public statements through professional associations and newsletters that define fetal alcohol syndrome as a social problem of significant proportion that calls for heightened awareness and action.

KEY PROFESSIONS HAVE TOO LITTLE KNOWLEDGE OF FETAL ALCOHOL SYNDROME AND EFFECTS.

Recommendation: Minnesota must ensure that those who work with affected families have a thorough understanding of these conditions by including fetal alcohol syndrome and effects education in academic training, continuing education, and licensing requirements. Funding: \$150,000 for professional training of health care providers, social services providers, educators, and others.

POOR COORDINATION HAMPERS PREVENTION, DIAGNOSIS, AND SERVICES.

Recommendation: Minnesota needs a state office to coordinate all fetal alcohol syndrome activities and should fund activities through public and private sources. Funding: \$350,000 for the creation of a public/private FAS coordinating board to ensure that the task force's recommendations are carried out in the future.

The members of the task force hope that the funding allocated by the 1998 Legislature is the first step

in a long-term commitment to this issue in Minnesota. Because our efforts must go beyond one legislative session, health care providers should continue to convey to their legislators the importance of this issue. Health care professionals should continue to learn about FAS and FAE and increase their work in both prevention and intervention.

Get Involved

A number of community organizations have been involved in FAS/FAE prevention and intervention, including Thunder Spirit Lodge, the FAS Work Group, the March of Dimes, and Minnesota Healthy Roots. Anyone interested in working with one of these groups can contact me at the Department of Pediatrics at Hennepin County Medical Center, 612/347-2960. Numerous opportunities are available to work on the task force's recommendations, for example, by developing the regional diagnostic centers, introducing a curriculum at the University of Minnesota Medical School on FAS/FAE, or studying the incidence and prevalence of FAS/FAE.

MM

Richard Lussky is assistant medical director of the Newborn ICU at Hennepin County Medical Center, a member of the Governor's Task Force on Fetal Alcohol Syndrome, and a member of the Minnesota Medicine Advisory Committee.

The task force report, "Suffer the Children: The Preventable Tragedy of Fetal Alcohol Syndrome," is available at the governor's Web site: www.governor.state.mn.us. It can also be obtained from Minnesota Planning, 685 Cedar Street, St. Paul, MN 55155, 612/296-3985; or the Minnesota Department of Health, R.N. Barr Library, 717 Delaware Street SE, Minneapolis, MN 55440, 612/623-5274, inventory code 141-0486.

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Malaria in Minnesota

Past, Present, and Future

Malaria, largely eradicated from the United States by 1952, remains common in many parts of the world and is constantly imported into this country—even the Midwest.

L. Joseph Melton III, M.D.

Editor's Note: Malaria in Minnesota? Usually considered an exotic tropical disease, malaria once afflicted Minnesotans in epidemic proportions. I saw my first case in 1980 in a recent immigrant from Southeast Asia. It is always amazing to find the abnormal red cells, just like they showed us in medical school. Read on to find out when and how malaria first came to Minnesota.

—Barbara Yawn, M.D., M.Sc.,
Series Editor

The Past

It may seem odd to think of malaria as a serious problem in the Upper Midwest, but it once was, particularly in the late summer and early fall months. In fact, Dr. W. W. Mayo, the founder with his sons of Mayo Clinic, moved to Minnesota from LaFayette, Indiana, specifically to escape the malaria that was endemic there.¹ Indeed, malaria was so common that it wasn't really considered a disease at all—instead, the pioneers called it “seasoning,” the process by which they built up immunity to the local strain of malaria. Historians generally agree that malaria arrived in this country with infected Europeans and slaves from Africa and the Caribbean.^{2,3} By 1850, the disease had spread out from the rice-growing areas along the Atlantic coast in the Southeast to involve the whole country, peaking in 1870. Only parts of Maine, northern Wisconsin and northern Minnesota, and the dry or mountainous areas of the West were spared.⁴ Al-

though there was no malaria in the Le Sueur area when Mayo moved there in 1856, an army surgeon reported in 1848 that malaria had just recently emerged to cause substantial morbidity and mortality among Native Americans around St. Anthony Falls.⁵ Malaria was soon well established along the Mississippi River. In Winona in 1852, it was said that every settler was affected.⁶

Malaria increased dramatically with the initial European settlement of Minnesota as a result of several factors. First, most early settlement happened along waterways. Breeding of *Anopheles quadrimaculatus*, the most important vector of malaria in Minnesota, was also enhanced when streams were dammed for mills. Malaria was transmitted indigenously in Oronoco as late as 1913 after the Zumbro River was dammed to provide power for a furniture plant,⁷ and malaria incidence increased locally when the Mississippi River was dammed in the 1930s.⁸ In addition, early log cabins were exceeded only by outhouses as a favorite refuge for *A. quadrimaculatus*. In Wabasha in 1939, surveyors captured 4,500 of these mosquitoes in one month in a single basement and three nearby outhouses.⁸ Added to the large number of mosquitoes was a huge number of susceptible new people. The Minnesota population grew from 6,000 in 1850 to over 250,000 by 1865.⁹ Many of these immigrants were infected with malaria, which was endemic in Germany and Scan-

dinavia at that time.¹⁰ The new arrivals, even if free of malaria when they started out, were often infected in the course of their journey to Minnesota—many traveled by riverboat through intensely malarious areas further south.¹¹ Additional infections were introduced by travelers and by soldiers returning from the Civil War.

Subsequently, however, the risk of malaria rapidly declined. The reported malaria death rate in Minnesota fell from 26 per 100,000 in 1860 to 3 per 100,000 in 1870.¹² This decline was attributable, first, to a reduced rate of immigration. In addition, residents increasingly lived in towns, rather than rural areas, and these towns were more often located away from rivers as the building of railroad lines opened up the interior of the state. The quality of housing also improved, since people generally moved from log cabins as soon as they could afford the average \$450 it cost to build a frame house.¹² Screens, invented in the 1850s to sift flour, came into general use on windows in the late 1870s and early 1880s. Although the tiling and draining of farmland is often credited with reducing malaria, in Minnesota, extensive drainage occurred only after the disease had already declined to a low level.² The number of cows—*Anopheles* mosquitoes' preferred target—in Minnesota rose from 2,000 in 1850 to 310,000 in 1870.¹² Finally, the use of quinine increased following the abolition of import duties in 1879.

continued

The Present

Malaria shifted from a ubiquitous national affliction in 1850 to a limited problem of Southern river systems by the mid-1930s.¹³ With continued pressure from loss of wetland habitats, migration of rural residents to towns, and a dramatic increase in domestic insecticide use, the disease disappeared from all but a few endemic areas in the rural South.¹⁴ Under the auspices of the Office of Malaria Control in War Areas—which became the Communicable Disease Center in 1946 and, ultimately, the Centers for Disease Control and Prevention—malaria was essentially eradicated from the United States by 1952.

Encouraged by successes here and elsewhere, in 1957 the World Health Organization embarked on a program to eradicate malaria worldwide. However, the rise of insecticide-resistant mosquitoes, drug-resistant parasites, social disruption, and migration led to the collapse of this effort,¹⁵ and malaria eradication was abandoned as a realistic objective in 1969. The

situation has worsened since then. In 1993, 2 billion people (nearly 40% of the world population) lived in areas where malaria was endemic.¹⁶ As many as one person in 20 is infected with malaria worldwide, and about 350 million new cases occur annually.¹⁷ Anywhere from 1.7 million to 2.7 million people, mostly children, die from malaria each year,¹⁶ recalling the situation in the last century, when an estimated 2.5 million people died of malaria annually.

Because malaria is so common in many parts of the world, it is constantly imported into the United States. Between 1966 and 1992, 35,767 cases of malaria were imported into the United States,¹⁸ including over 14,000 cases among American troops returning from the Vietnam War. More recently, over 100 cases were reported in American troops returning from Somalia.¹⁹ Malaria is also imported by missionaries and Peace Corps workers, especially from Africa, and by immigrants, travelers, and visiting workers.¹⁸ In a sample from migrant camps in North Carolina several years ago, 28% of

the workers were from malarious areas; 4% had evidence of infection; and one had an active case of vivax malaria.²⁰ A number of small outbreaks of malaria in Florida, Southern California, and New Jersey have been linked to infected migrant workers.²¹⁻²³ Finally, mosquitoes infected with malaria could be introduced directly into this country in airborne container freight.²⁴ Twenty-one cases of imported malaria were recorded in Minnesota in 1996, from a total of 1,542 nationwide.²⁵ Most of these were vivax malaria, the type that predominated in this region in the past.

The Future

There is growing concern about the potential effect of global warming on malaria transmission. Climate changes might lead to an additional 1 million malaria deaths annually within 50 years.¹⁵ Most assessments indicate that the relative increase in malaria transmission will be greatest at the present limits of its range in areas where mosquito distribution is restricted by temperature.¹⁷ In one

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scenario, the risk of seasonal transmission of vivax malaria could increase a hundred-fold in temperate regions between 1990 and 2100.²⁶ This assessment indicates that malaria transmission could occur as far north as the Canadian border because *Anopheles* mosquitoes are already widespread in Minnesota. With global warming of several degrees, however, malaria transmission could spread into much of Canada by 2100.²⁶ The combination of a large population of susceptible people and plenty of *Anopheles* mosquitoes is an explosive mix, lacking only introduction of the parasite.

To help deal with this potential threat, the Minnesota Emerging Infections Program was established in the fall of 1994.²⁷ One aspect of the program involves increased surveillance by practitioners and public health authorities for a variety of new and/or serious diseases, including malaria. In addition to a greater index of suspicion for the disease,^{28,29} timely reporting of suspected malaria cases to the Minnesota Department of Health is essential. Investi-


gation of a 1994 malaria outbreak in Houston, Texas, was hampered because physicians had reported only seven of the 24 cases that were treated in the city.³⁰ Likewise, while investigating a case of malaria acquired at a campground in Michigan, examiners discovered that only two of 10 cases of active malaria treated in that state had been reported.³¹

Physicians can also reduce the problem of imported malaria and help their patients avoid acquiring it by promoting proper prophylactic measures for travelers to malarious areas. These areas are identified in a brochure, "Preventing Malaria in Travelers: A Guide for Travelers to Malarious Areas," which can be obtained by faxing a request to the Centers for Disease Control and Prevention (770/488-7761). The clinical aspects of malaria prophylaxis and treatment have been reviewed in detail in several recent publications.^{32,33} Up-to-date recommendations for preventing malaria are available 24 hours a day by telephone (888/CDC-FACT) or fax (770/488-7761) from the CDC's Malaria Hot-

line. Additional information can be found at the CDC Web site (<http://www.cdc.gov>). Consultation on malaria treatment recommendations is available from the Division of Parasitic Diseases, National Center for Infectious Diseases (telephone 770/488-7788 from 8:00 a.m. to 4:30 p.m. EDT Monday through Friday and 404/639-2888 after hours and on weekends for life-threatening emergencies only).

Conclusion

Malaria is perhaps the most deadly disease in the world, having killed more people than all the wars in history combined and more than even the plague. In the United States, a malaria epidemic spread through the country with migration and settlement, reaching a peak in 1870. The disease then began to die out because of insufficient numbers of infected mosquitoes to assure transmission, insufficient numbers of infected humans to pass the parasite to a new generation of mosquitoes, and insufficient contact between host and parasite to keep the cycle going. Steps to



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lower the density of *Anopheles* mosquitoes, such as drainage and development, and to reduce the prevalence of malaria carriers (treatment or prophylaxis) and efforts to separate one from another, such as the use of window screens, limited the disease geographically so that it could be eradicated in this country. For the same reasons, the 69 cases of malaria acquired from locally infected mosquitoes in the United States in the past 35 years³⁴ did not lead to reestablishment of the disease. Nonetheless, cases of locally acquired malaria have been reported as far north as Michigan,³¹ New York City,³⁴ and New Hampshire,³⁵ so it is not impossible in Minnesota. As in neighboring Wisconsin,³⁶ however, malaria in returning travelers will be the problem physicians encounter most often in this state. MM

Joe Melton is a physician in the Section of Clinical Epidemiology, Department of Health Sciences Research, Mayo Clinic and Mayo Foundation, in Rochester, Minnesota.

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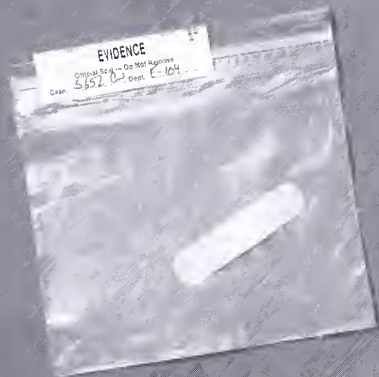


exhibit A:

Adhesive bandage, which plaintiff alleges
defendant pulled rapidly from skin, violently tearing three
hairs from plaintiff's arm, which resulted in severe shock,
trauma, disfigurement, chronic debilitating pain and
permanent psychological damage.

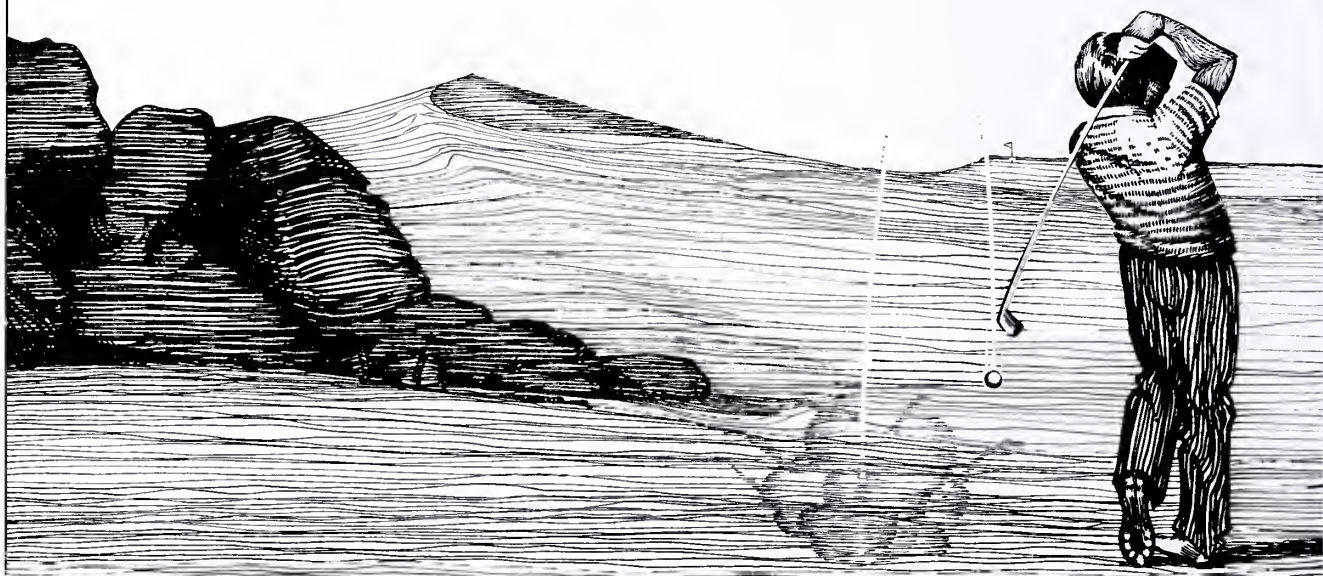
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Is It Possible to Slow Down to the Speed of Life?

Just because you're busy doesn't mean you can't find peace and enjoyment every day, say the authors of "Slowing Down to the Speed of Life."

Reviewed by Robert Veninga, Ph.D.

In their fascinating book, "Slowing Down to the Speed of Life: How to Create a More Peaceful, Simpler Life from the Inside Out" (HarperCollins, 1997), Richard Carlson and Joseph Bailey avoid simplistic admonitions on how to manage stress. Rather, they offer a compassionate perspective on living life to the fullest—even when facing complex responsibilities.

At the heart of the book is an examination of two modes of thinking: processing/analytical and free-flowing. The processing/analytical mode is the zone in which most of us feel comfortable. It is a rational way of thinking, taught from birth and highly prized in Western culture. It enables us to plan, solve problems, and give advice. The authors do not denigrate the analytical side of life. Indeed, if they were addressing a group of physicians, I think they would applaud the analytical skills that allow physicians to identify and cluster symptoms, prescribe treatments, and alleviate suffering.

Nevertheless, the authors suggest that we often neglect the "free-flowing" mode of thought. And just what is this? It's the ability to enjoy the moment. It's the ability to take time for avocations that nourish our spirit. It's the ability to reflect not only on the burdens of life, but also on the many joys we encounter in our journey.

Why is this free-flowing thought style missing in the lives of so many people? Because we can't turn off the engine of work. We come home at the

"Discover and master the principles of happiness and personal growth. I recommend it highly."
—JOHN GRAY, Ph.D., author of *Men Are from Mars, Women Are from Venus*

Slowing Down to the Speed of Life



HOW TO CREATE A MORE PEACEFUL,
SIMPLER LIFE FROM THE INSIDE OUT

Richard Carlson

author of the #1 bestseller *Don't Sweat the Small Stuff*

& Joseph Bailey

end of a busy day and plunge into new tasks. There are bills to be paid, e-mail messages demanding a response, committee meetings at church or school.

The authors understand these pressures and do not suggest that we shrink from them. But they remind us that life is not simply *doing* but *being*. *Being* means conversing with others in a nonrushed way. *Being* refers to entering fully into the lives of those we love. *Being* suggests the ability to enjoy a pleasant summer evening and to see the beauty in the first snow of winter.

Most people wistfully hope the day will come when they can engage in life more peacefully. According to

the authors, now is the time to do it. How do you move into this creative, relaxed lifestyle? You don't necessarily cut back on your schedule. And you don't suddenly eliminate charitable work. What you do is make a commitment to enjoy every day of your life. You enter fully into the lives of people you love. You listen to criticism, but do not respond until you can do so with compassion. You treat all disasters as incidents and no incident as a disaster. And you remember Lao Tzu: "All action begins in rest ... this is the ultimate truth."

Is there anything new in this advice? Probably not. In fact, it is probably similar to the advice physicians often give to patients who are overwhelmed by the stresses of life.

What this book does, however, is blend a philosophical approach to stress with current psychological theory. It will give you a fresh perspective on how to manage the challenges of parenting. ("Peaceful Parenting" is one of the best chapters in the book.) It will give you practical information on managing your time. And it will provide a fresh reminder that it is possible to live a busy life while enjoying it to the fullest. **MM**

Robert Veninga is a professor in the School of Public Health at the University of Minnesota and a co-author of "The Work/Stress Connection: How to Cope with Job Burnout" (with James P. Spradley, published by Little, Brown and Co., 1981).

POWER OF THE PEN

(continued from page 15)

standing medical terminology and the clinical experience that can guide them in fairly relaying health information, they generally lack the benefits of a formal education in journalism. "Don't think you can waltz into a newsroom and suddenly become a star," warns Bloom. "The M.D. degree won't do anything for you unless you've already proven yourself a first-rate journalist with a track record of superbly written and well-researched medical stories."

As long as a discrepancy exists between medical wisdom and the health of the population, there will be a valued role for the medical journalist. According to David Satcher, M.D., U.S. surgeon general, "We've come to a point where, unless we can communicate to people outside of medicine, we can't achieve a lot of our goals."⁵

MM

Scott Eggener is a medical student at Stanford University School of Medicine. Reprinted with permission from

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For pointers on developing your medical writing style, see Minnesota Medicine's new column, "Just Write," on page 60.

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WEATHERS *continued from page 24*

over there," and if he threw a stone he could hit it. The only problem was he didn't know which way to throw the stone.

Mother Nature and Mount Everest had joined to destroy the stranded team. The climbers fought to stay warm. They huddled together, belly to belly, slapping one another to generate heat. At this point, Weathers found himself slipping into hypothermic coma. "I felt like I was floating and someone was pulling me across the ice. I was not cold anymore, and even in my state, I recognized this was probably not a good thing," he says. "There is something we all know in the high mountains—if you go into hypothermic coma, you'll never, ever, ever wake up. It's a truth we all accept."

What occurred next was certainly not found in any textbook or mountain guidebook. Frozen, buried in snow, and barely breathing, Weathers emerged from his mountain grave. He returned to consciousness and looked at his gloveless right hand sticking out of his parka sleeve. He hit the "gray, dead thing" on the ice and it made a thud like a block of wood. That sound grabbed his attention enough for him to know he was somewhere on the mountain, and alive.

"I did know that the cavalry was not going to show up," Weathers says. "I could see my family in front of me as clearly as if they were standing there, and I knew if I didn't get up I would be spending eternity in that spot."

He did get up and willed his way to camp. Once there, he was placed in American guide Scott Fisher's tent and left to "get on with the business of completing his journey [to die]."

Meanwhile, back in Dallas, Peach Weathers, who had been informed her husband was dead and now learned he was alive, started a monumental effort to launch a helicopter rescue. A military pilot in Nepal who "believed he possessed a brave heart" but had never been challenged agreed to the rescue, says Dr. Weathers. In a daring, never-before-attempted rescue during which the pilot flew his helicopter into thin air far above its normal operating altitude, Weathers and another climber were grabbed from the jaws of Everest and taken to safety.

The Mountain Was the Easy Part

When he returned home, Weathers was not sure who or what would be there for him.

"I had no idea whether the relationships with my family [wife, son, Beck II, and daughter, Meg] and colleagues had been pushed to the point of no return," he says. "I didn't know if I would work again or the severity of my injuries."

Even though he lost both hands to frostbite, Weathers has returned to practicing medicine, with the aid of a specially trained assistant. "Fortunately, I have my eyes and mind," he says. He also is involved in computer programming at the office and home.

The greatest turnaround after Mount Everest for Weathers has been his reconnection to his family and to himself. He admits his marriage before his last climb "was as dead as I was on that ice." He is now making himself available any time his family needs him. His daughter is a musician, and he recently taught her how to drive. His son is enrolled at Duke University.

"I had shut my family out," he says. "The time I spent working and climbing was so great there was really nothing else left." Ironically, the 50-year-old Weathers was lured to mountaineering while on family vacations in Colorado. He discovered he loved the physical challenge and soon found himself taking on volcanoes in Mexico, sheets of ice in New England, and peaks around the world that stretched forever into the clouds.

"Physicians tend to be pretty driven individuals who can sometimes be on the verge of obsession," Weathers notes. "We channel an awful lot of those energies into work and our activities. Of course, when we do it for work, we have the excuse that we are doing it for the family."

Weathers says his wife of 21 years realized her husband had changed. "My values now are much more encompassing of people rather than external type of goals. Peach has been willing to stay and give me a second chance. She is an amazing woman," he says.

"I resolved I would not allow myself to slip into self-pity or blame anybody else for what happened to me," Weathers says. "I truly believed that my family and the people around me were the most important part of my life and I was going to do whatever it took to redeem myself to them."

Climbing is much like medicine since it involves the same type of commitment and dedication, Weathers says. "I was the climbing. I was the work. Everything else around me was secondary."

"You can't change the person you were overnight," he adds. "You can't let yourself slide right back into what you were doing before." Weathers is now finding interests with merit that he can accomplish with a "sense of grace."

Does it haunt him that he never reached the summit of Mount Everest?

"Summits are ways you keep score," Weathers says. "The reason you climb has almost nothing to do with reaching the top. Nobody ever conquers a mountain anymore than a flea crawling up an elephant's back conquers the elephant. The whole point is to conduct yourself honorably and do the best you can." **MM**

Laura Albrecht is photo editor for Texas Medicine, the journal of the Texas Medical Association.

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A Calendar of Continuing Medical Education Courses

Provided through the MMA Committee on Accreditation and CME. For assistance with scheduling meetings or for information on future medical meetings and CME courses, please contact the MMA office: 3433 Broadway Street NE, Suite 300, Minneapolis, Minnesota 55413-1761; 612/378-1875. For a complete listing of our calendar, visit the MMA home page at www.mnmed.org. Information for each entry is arranged by date; name of program; primary sponsor; location; contact person.

AUGUST 1998

Aug. 9-11 **Success with Failure: New Strategies for the Evaluation and Treatment of Congestive Heart Failure** Mayo Foundation; Chateau Whistler, Whistler, British Columbia, Canada. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Aug. 12 **Advanced Cardiac Life Support (ACLS)** Allina Health System; Abbott Northwestern Hospital, Minneapolis, MN. CONTACT: Julie Page, Allina Health System Clinical Education and Research Administration-81475, 5601 Smetana Drive, PO Box 9310, Minneapolis, MN 55440; 612/992-3897.

SEPTEMBER 1998

Sept. 10 **The Hidden Epidemic: A Conference on Sexually Transmitted Diseases** University of Minnesota Department of Medicine, Minnesota Department of Health, MATEC, and the Minnesota AIDS Project; Country Inn Suites, Mankato, MN. CONTACT: Sarah Rybicki, 515 Delaware Street SE, 1-210 Moos Tower, Minneapolis, MN 55455; 612/625-6979.

Sept. 11 **The Hidden Epidemic: A Conference on Sexually Transmitted Diseases** University of Minnesota Department of Medicine, Minnesota Department of Health, MATEC, and the Minnesota AIDS Project; Hotel Sofitel, Bloomington, MN. CONTACT: Sarah Rybicki, 515 Delaware Street SE, 1-210 Moos Tower, Minneapolis, MN 55455; 612/625-6979.

Sept. 11 **The Hidden Epidemic: A Conference on Sexually Transmitted Diseases** University of Minnesota Department of Medicine, Minnesota Department of Health, MATEC, and the Minnesota AIDS Project; Bennett's on the Lake, Duluth, MN. CONTACT: Sarah Rybicki, 515 Delaware Street SE, 1-210 Moos Tower, Minneapolis, MN 55455; 612/625-6979.

Sept. 11 **Bloodless Medicine and Alternatives to Transfusion** Hennepin County Medical Center; Pillsbury Auditorium/HCMC, Minneapolis, MN. CONTACT: Ann Samways, HCMC CME, 701 Park Avenue, Mail Code 861B, Minneapolis, MN 55415; 612/347-2078.

Infection Control Courses

The following activities have been designed to meet the Minnesota Board of Medical Practice physician licensure requirement for CME credit in the subject of infection control.

Sept. 10 **The Hidden Epidemic: A Conference on Sexually Transmitted Diseases** University of Minnesota Department of Medicine, Minnesota Department of Health, MATEC, and the Minnesota AIDS Project; Country Inn Suites, Mankato, MN. CONTACT: Sarah Rybicki, 515 Delaware Street SE, 1-210 Moos Tower, Minneapolis, MN 55455; 612/625-6979.

Sept. 11 **The Hidden Epidemic: A Conference on Sexually Transmitted Diseases** University of Minnesota Department of Medicine, Minnesota Department of Health, MATEC, and the Minnesota AIDS Project; Hotel Sofitel, Bloomington, MN. CONTACT: Sarah Rybicki, 515 Delaware Street SE, 1-210 Moos Tower, Minneapolis, MN 55455; 612/625-6979.

Sept. 11 **The Hidden Epidemic: A Conference on Sexually Transmitted Diseases** University of Minnesota Department of Medicine, Minnesota Department of Health, MATEC, and the Minnesota AIDS Project; Bennett's on the Lake, Duluth, MN. CONTACT: Sarah Rybicki, 515 Delaware Street SE, 1-210 Moos Tower, Minneapolis, MN 55455; 612/625-6979.

Sept. 12 **The Hidden Epidemic: A Conference on Sexually Transmitted Diseases** University of Minnesota Department of Medicine, Minnesota Department of Health, MATEC, and the Minnesota AIDS Project; Ramada Plaza Suites, Fargo, ND. CONTACT: Sarah Rybicki, 515 Delaware Street SE, 1-210 Moos Tower, Minneapolis, MN 55455; 612/625-6979.

ENDURING MATERIALS

Videotapes: **Bloodborne Pathogens, Antibiotic Update and Resistance, TB Update** Allina Health System. CONTACT: Julie Page, 5601 Smetana Drive, PO Box 9310, Minneapolis, MN 55440-9310; 612/992-3897.

Videotapes: **Overview of Tuberculosis, Bloodborne Pathogens, HIV Update** University of Minnesota. CONTACT: Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600.



Continuing Medical Education

presented by Allina Health System

September, 1998

11 Update in Clinical Cardiology

PRESENTED BY: Minneapolis Heart Institute Foundation
LOCATION: Radisson Arrowhead Resort, Alexandria, MN

18-19 Current Trends in Ophthalmology: Ophthalmic Lasers

PRESENTED BY: Phillips Eye Institute
LOCATION: DoubleTree Grand Hotel, Bloomington, MN

25-26 Advanced Life Support in Obstetrics (ALSO)

PRESENTED BY: Allina Health System
LOCATION: United Hospital, St. Paul, MN

25-26 Advanced Techniques in Cutaneous and Cosmetic Lasers

PRESENTED BY: Abbott Northwestern Hospital Institute for
Minimally Invasive Technology
LOCATION: Abbott Northwestern Hospital, Mpls., MN

October, 1998

23 Insights & Outlooks '98

PRESENTED BY: St. Paul Heart Clinic
LOCATION: United Hospital Conference Center, St. Paul, MN

30 Frontline Neurology

PRESENTED BY: Minneapolis Neuroscience Institute
LOCATION: DoubleTree Grand Hotel, Bloomington, MN

30 Practical Approaches to Common Problems in Gastroenterology

PRESENTED BY: Minnesota Gastroenterology
LOCATION: Radisson Hotel South & Plaza Tower,
Bloomington, MN

November, 1998

7 Laughter: A New Twist to the Old Illness

PRESENTED BY: St. Francis Cancer Center, Shakopee
LOCATION: The Wild's Country Club, Shakopee, MN

9-10 Advanced Trauma Life Support (ATLS)

PRESENTED BY: Allina Health System
LOCATION: United Hospital, St. Paul, MN

14 6th Annual Orthopedic Symposium

PRESENTED BY: United/Mercy Hospitals
LOCATION: Earle Brown Heritage Center, Brooklyn Park, MN

For more information contact:
Allina Clinical Education and Research
Administration at (612) 992-2424



Visit the Allina CME Calendar at <http://www.allina.com>

Sept. 11-13 **Annual Ambulance Medical Directors Retreat** Hennepin County Medical Center; Radisson Arrowwood, Alexandria, MN. **CONTACT:** HCMC CME, 701 Park Avenue, Mail Code 861B, Minneapolis, MN 55415; 612/347-2075, toll-free 888/263-4262.

Sept. 12 **The Hidden Epidemic: A Conference on Sexually Transmitted Diseases** University of Minnesota Department of Medicine, Minnesota Department of Health, MATEC, and the Minnesota AIDS Project; Ramada Plaza Suites, Fargo, ND. **CONTACT:** Sarah Rybicki, 515 Delaware Street SE, 1-210 Moos Tower, Minneapolis, MN 55455; 612/625-6979.

Sept. 13-16 **2nd Annual Meeting: Heart Failure Society of America** University of Minnesota/Continuing Medical Education; Boca Raton Resort and Club, Boca Raton, FL. **CONTACT:** Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 13-18 **Advances in Diagnostic Radiology and Advanced Radiology Life Support Course** Mayo Foundation; Banff Springs Hotel, Banff, Alberta, Canada. **CONTACT:** Office of Continuing Medical Education, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Sept. 14-15 **Advanced Life Support in Obstetrics (ATLS)** Allina Health System; United Hospital, St. Paul, MN. **CONTACT:** Julie Page, Allina Health System Clinical Education and Research Administration-81475, 5601 Smetana Drive, PO Box 9310, Minneapolis, MN 55440; 612/992-3897.

Sept. 15 **Endorectal Ultrasonography** University of Minnesota/Continuing Medical Education; Midway Outpatient Clinic, St. Paul, MN. **CONTACT:** Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 16 **Molecular Biology of Colorectal Cancer** University of Minnesota/Continuing Medical Education; Radisson Hotel Metrodome, Minneapolis, MN. **CONTACT:** Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 16 **Pelvic Floor Physiology Course** University of Minnesota/Continuing Medical Education; Midway Outpatient Clinic, St. Paul, MN. **CONTACT:** Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 16-19 **First National Conference on Infanticide: Asphyxiation, Shaken Baby, and Neglect** Hennepin County Medical Center; St. Paul Radisson, St. Paul, MN. **CONTACT:** HCMC CME, 701 Park Avenue, Mail Code 861B, Minneapolis, MN 55415; 612/347-2075, toll-free 888/263-4262.

Sept. 16-19 **Radiology Refresher Course** University of

Minnesota/Continuing Medical Education; Silverado Resort, Napa, CA. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 17-19 **Principles of Colon and Rectal Surgery (61st Annual Course)** University of Minnesota/Continuing Medical Education; Radisson Hotel Metrodome, Minneapolis, MN. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 18 **Annual Contemporary Issues in Hemodialysis** Hennepin County Medical Center; Sheraton Midway Hotel, St. Paul, MN. CONTACT: Ann Samways, HCMC CME, 701 Park Avenue, Mail Code 861B, Minneapolis, MN 55415; 612/347-2078.

Sept. 18 **Primary Care Conference** St. Mary's/Duluth Clinic Health System; Spirit of the North Theatre, Fitger's Complex, Duluth, MN. CONTACT: Diane Torvick, 400 East Third Street; Maildrop 5AV2ME, Duluth, MN 55805; 218/725-3838.

Sept. 18-19 **Current Trends in Ophthalmology: Ophthalmic Lasers** Phillips Eye Institute; DoubleTree Grand Hotel, Bloomington, MN. CONTACT: Julie Page, Allina Health System Clinical Education and Research Administration-81475, 5601 Smetana Drive, PO Box 9310, Minneapolis, MN 55440; 612/992-3897.

apolis, MN 55440; 612/992-3897.

Sept. 19-20 **Clinical Autonomic Quantitation Workshop** Mayo Foundation; Mayo Foundation, Rochester, MN. CONTACT: Office of Continuing Medical Education, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Sept. 24-26 **Mechanical Ventilation: Principles and Applications** University of Minnesota/Continuing Medical Education; Hyatt Regency Hotel, Minneapolis, MN. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 25-26 **Evaluation and Management of Peripheral Vascular and Cerebrovascular Disease** University of Minnesota/Continuing Medical Education; Radisson Hotel Metrodome, Minneapolis, MN. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 25-26 **Advanced Techniques in Cutaneous and Cosmetic Lasers** Abbott Northwestern Hospital Institute for Minimally Invasive Technology; Abbott Northwestern Hospital, Minneapolis, MN. CONTACT: Julie Page, Allina Health System Clinical Education and Research Administration-81475, 5601 Smetana Drive, PO Box 9310, Minneapolis, MN 55440; 612/992-3897.

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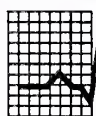
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Healthcare

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Sept. 29 **Complementary and Alternative Health Care** University of Minnesota/Continuing Medical Education; Radisson Hotel Metrodome, Minneapolis, MN. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

OCTOBER 1998

Oct. 1-2 **Annual Forensic Science Seminar** Hennepin County Medical Center; HCMC, Minneapolis, MN. CONTACT: HCMC CME, 701 Park Avenue, Mail Code 861B, Minneapolis, MN 55415; 612/347-2075, toll-free 888/263-4262.

Oct. 1-2 **25th Mayo Clinic Pediatric Days** Mayo Foundation; Leighton Auditorium, Siebens Medical Education Building, Rochester, MN. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Oct. 2 **Upper Midwest Sleep Society 9th Annual Meeting** Hennepin County Medical Center; Sheraton Inn Airport, Bloomington, MN. CONTACT: Ann Samways, HCMC CME, 701 Park Avenue, Mail Code 861B, Minneapolis, MN 55415; 612/347-2078.

Oct. 8 **Current Issues in Point-of-Care Testing** Mayo Medical Laboratories; Mayo Clinic, Rochester, MN. CONTACT: Julie McAdams, 200 First Street SW, Rochester, MN 55905; 507/284-8599.

Oct. 8 **Domestic Violence: The Invisible Victims** Hennepin County Medical Center; Pillsbury Auditorium/HCMC, Minneapolis, MN. CONTACT: Mary Meredith, HCMC Education Department, 701 Park Avenue, Mail Code 862B, Minneapolis, MN 55415; 612/347-2392.

Oct. 9-10 **Current Issues in Phlebotomy** Mayo Medical Laboratories; Mayo Clinic, Rochester, MN. CONTACT: Julie McAdams, 200 First Street SW, Rochester, MN 55905; 507/284-8599.

Oct. 11-14 **14th Annual Echocardiography in Congenital Heart Disease—Back to the Basics** Mayo Foundation; Mayo Clinic, Rochester, MN. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Oct. 16 **Seventh Annual Conference for Planners of Continuing Medical Education** Minnesota Medical Association Committee on Accreditation and CME; The Northland Inn, Brooklyn Park, MN. CONTACT: Jane Phillip, 3433 Broadway Street NE, Suite 300, Minneapolis, MN 55413; 612/378-1875, 800/342-5662.

Oct. 22-23 **1998 Diabetes Conference: Diabetes in an Ever-Changing World—Are You Ready?** St. Mary's/Duluth Clinic Health System; Duluth Entertainment Convention Center, Duluth, MN. CONTACT: Diane Torvick, 400 East Third Street; Maildrop 5AV2ME, Duluth, MN 55805; 218/725-3838.

Oct. 29 **Geriatric Care for Primary Care Physicians** Mayo Foundation; Leighton Auditorium, Siebens Medical Education Building, Rochester, MN. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

NOVEMBER 1998

Nov. 19-21 **Annual Orthopaedic and Trauma Seminar** Hennepin County Medical Center; Minneapolis Convention Center, Minneapolis, MN. CONTACT: HCMC CME, 701 Park Avenue, Mail Code 861B, Minneapolis, MN 55415; 612/347-2075, toll-free 888/263-4262.

FEBRUARY 1999

Feb. 11-14 **Neurology in Clinical Practice** Mayo Foundation; Rancho Bernardo Inn, San Diego, CA. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Feb. 15-17 **Gynecologic Surgery: Perspectives for the 21st Century** Mayo Foundation; Rancho Bernardo Inn, San Diego, CA. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.



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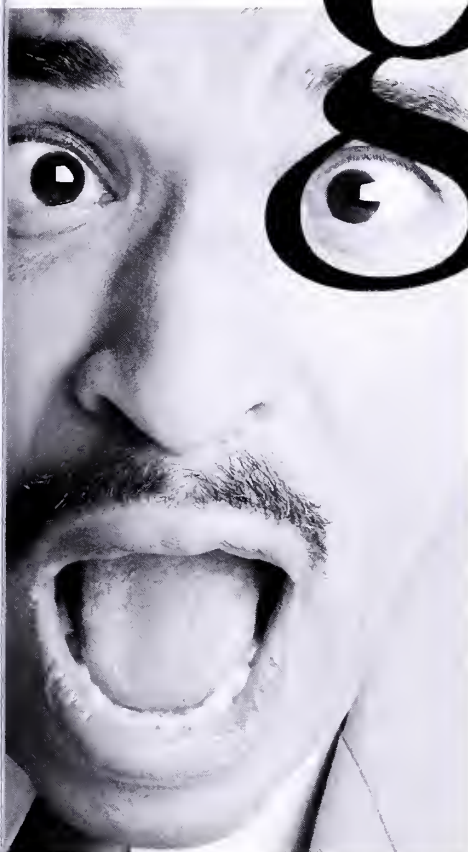
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Mankato Clinic, Ltd., is seeking additional BC/BE physicians in the following specialties: occupational medicine, dermatology, orthopedic surgery, pulmonary medicine, radiology, and urgent care. The Mankato Clinic is a 70-physician multispecialty group practice in south-central Minnesota with a trade-area population of 250,000+. Guaranteed salary first year, incentive thereafter with full range of benefits and liberal time off. For more information, call Dr. Bryon C. McGregor, Medical Director, or Roger Greenwald, Executive Vice President, 507/625-1811, or write PO Box 8674, Mankato, MN 56002-8674. (6/98-R)

MDsearch assists medical groups and hospitals in their recruiting efforts. For confidential information on opportunities in the Upper Midwest, send CV and/or call collect Mary Jo Cordes, MDsearch, PO Box 21507, St. Paul, MN 55121; 612/454-7291. Fax: 612/454-7277. (2/93-R)

Urgent Care Physicians: Independent group seeking part-time/full-time physicians to staff our urgent care facilities in Bloomington, Burnsville, Edina, and Lakeville. Contact the director of support services, 612/985-8931, or send inquiries to Quello Clinic Ltd., 7801 East Bush Lake Road, Suite 300, Bloomington, MN 55439. (*6/98-R)

Family Physicians: Independent, well-established suburban family physician group seeking part-time/full-time family physicians who like doing ob/gyn and full FP services. Clinics are in Bloomington, Burnsville, Edina, Eden Prairie, Lakeville, and Savage. Excellent call schedule. Contact medical director at 612/985-8922, or write to Quello Clinic Ltd., 7801 East Bush Lake Road, Suite 300, Bloomington, MN 55439. (*6/98-R)

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Falls Medical Search seeks Physicians for practice opportunities locally and nationally. To explore new practice options confidentially, send your CV or call Pat Falls, Falls Medical Search, 34 Forest Dale Road, Minneapolis, MN 55410; 612/922-0207 or 800/383-8916. (*5/92-R)

BC/BE General Pediatrician interested in primary and consultative pediatrics to join independent, physician-owned, multispecialty group located in the northern Minneapolis suburbs. We are seeking a fifth pediatrician to practice at one of our four clinic sites and at one hospital. Excellent call schedule. Competitive salary, excellent benefits package with partnership opportunity. Send curriculum vitae to Stephanie Clark, Physician Services, Columbia Park Medical Group, 6401 University Avenue NE, Suite 200, Fridley, MN 55432; Phone 612/586-5876; fax 612/571-3008. 4-10/98

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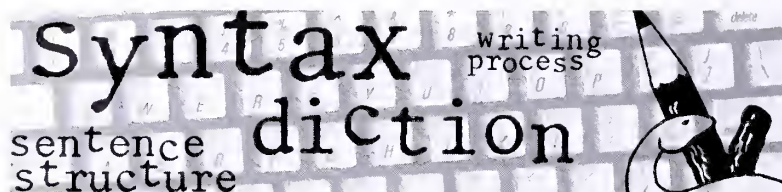
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Minnesota Medicine's newest
column on medical writing
by James Kaufmann,
Hennepin Faculty Associates
communications director



Getting 'Black on White' Why Is Writing So Hard?

An English teacher-turned medical communications expert introduces his new column on medical writing with advice on how to get started: Just write.

JAMES KAUFMANN, PH.D.

Editor's Note: With this issue, we begin a bimonthly column on medical writing by James Kaufmann, communications director at Hennepin Faculty Associates. Topics to be covered include the writing process, sentence structure, language, mechanics, and other issues related to writing.

Kaufmann, a former English teacher, says his research on medical writing led to a career helping physicians with their academic and other communications. "That's the objective version of my professional life," he says. "The romantic version is that I'm a teacher who ventured into the world to catch up with the students who never made it to my classroom." Welcome to Kaufmann's informal classroom.

Why is writing so hard? One reason is that, to be a good writer, you must understand the writing process, the product of the writing process, and the context in which writing occurs. Each of these represents a lot of territory. In this first column, the best we can do is a flyover at 30,000 feet. In subsequent columns, we'll come in lower, touch down, and do some exploring.

The Process

"What's the right way to write?"

The quick answer: There's no "right" way. Some ways are more productive than others, but the important thing is to put something down—or, in the words of Guy de Maupassant, "Get black on white." Just write.

Writing, interestingly, is only one part of the writing process. It's flanked by prewriting and rewriting. Prewriting is that part of the process in which you generate possible things to say and an order to say them in. Rewriting and polishing are where things get finished. At any point in the process, incubation can occur (a good way to rationalize procrastination). And the process is not necessarily linear: while writing or rewriting, for example, you might discover that you need to do a little more prewriting.

The Product

Texts have levels. On the surface is the level of mechanics: spelling and punctuation and such. Below that, diction (word choice). Below that, syntax (sentence structure). Then paragraph organization. Then the organization of a larger discrete chunk of text (for example, the methods section in a research article). Finally, the organization of the entire piece itself. And—oh yeah—the actual content: your message. Writers often try to manage all of these levels at once.

That adds to the difficulty of writing.

The Context

Understanding the context is the key to satisfying reader expectations. Many writers don't understand the context well enough to create successful texts. For example, a novice writer with a cogent point to make for journal or newspaper publication may not understand the letter-to-the-editor "genre" well enough to compose a letter that the publication will deem publishable.

Other writers become so engaged with the text that they inadvertently ignore the context. People working on grant applications, in their anxiety to include as much information as possible, often create dense-packed texts that will try the patience of their bleary-eyed reviewers.

As Someone Once Observed

No one can teach you to write ... but you can learn. I look forward to contributing to your learning process in the columns ahead.

James Kaufmann is director of the office of communications, Hennepin Faculty Associates, in Minneapolis.

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COVER

Harvard freshmen and twin sisters Akuorkor and Akiyeley Ablorh say their work with mentors in biomedical research at the University of Minnesota solidified their interest in the medical sciences (see Cover Story, page 12).

Photograph by Terry Gydesen.

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On the Shoulders of Giants

"Get it done before Hano makes rounds." That was a frequently heard comment on the wards at Wesley Memorial Hospital during my clinical years at Northwestern



Medical School. Tall, dark-bearded with a slight vulture stoop, nephrologist Jesse Hano struck terror in the heart of many a resident and medical student at Wesley. With his baritone Louisiana drawl, which was menacing rather than mellifluous, he would interrogate house staff on the minutiae of their patients' sodium, creatinine,

and urine output. He would probe to exhaustion the limits of their medical knowledge. His ward visits would leave house staff drained and diaphoretic.

So this is a mentor? In fact, Jesse Hano was my mentor in medical school. I, too, was intimidated by his cross-examinations and his seemingly unreasonable demands for precision: "No, the urine output was 500 cc, not 550 cc." But before I graduated, I saw past the grillings and the tirades to a sterling, near-unreachable standard of excellence that I kept in front of me throughout my training. For Hano drove himself as hard or harder than he pushed his house staff. His working hours were marathon. His command of patient data was impeccable. His medical knowledge was encyclopedic. And he cared fiercely about training good doctors.

Medicine and mentoring are inseparable. The last two years of medical school and postgraduate training are designed to link the teachers with the taught to flesh out the skeleton of knowledge acquired in the lectures and books of medical school years one and two. This month's *Minnesota Medicine* tells story after story of mentors who advised, taught, and led physicians on their career paths. In recognition of women in medicine month, we focus on women phy-

sicians, but from their stories, we can paint a universal mentor portrait.

Mentors see a reflection of themselves in their apprentices and a reflection of the past. They provide a sense of history. All of us stand on the shoulders of our predecessors. Mentors tell that saga and let their charges know where they came from.

Mentors teach, their words providing the judgment behind the data. And mentors hear the concerns of their students; being heard is important in learning.

Mentors give gifts of advice, wisdom, and time. Mentoring is a handicraft of hand-me-downs and handholding that all students need at some point.

Mentors trace with their students the path already traveled and that yet to be traveled. They share stories of their journey. Empirical science avoids anecdotes, but a mentor's tales dramatize trials and tests that can't be known any other way.

Mentors provide a reality check. Medicine ain't Welby, ER, or Kildare. Mentors tell their students what it's really like.

Most important, mentors build a life-long bridge to their mentorees that eclipses the sum of knowledge passed or hours spent. Who the mentor is is more important than the facts she transmits.

For many internists, Sir William Osler has been a mentor in absentia. An 1896 cartoon depicted Osler as an angel atop a tornado with the inscription "The Saint." Mentors do help us form our creeds and our principles, but their humanity is more important than their apparent infallibility. Jesse Hano was no saint. He was just the right person to show me how to practice medicine.

—Charles R. Meyer, M.D., Editor-in-Chief

"Mentoring is a handicraft of hand-me-downs and handholding that all students need at some point."



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The . Turning point

She likes to say she “was the oldest and the shortest” in her medical school class. Today, she’s undoubtedly one of the most accomplished and admired, too.

Incoming MMA President Judith M. Shank, M.D., can pinpoint the moment in her 30s when she made the conscious choice to become a physician. But looking back, the Wayzata dermatologist wonders if she hadn’t really begun making that decision three decades earlier.

“My father was a small-town surgeon in Iowa,” Shank says. “I was always extremely interested in his work. He was, in some ways, very conservative. He felt that men should be physicians and women should be nurses. But in some ways he was really progressive, too; he believed that women should be able to earn a living—that they should be able to take care of themselves and their children.”

At the University of Iowa College of Nursing, Shank began to flirt with the idea of becoming a physician. “I took some premed courses in summer school but got no encouragement from anyone,” she says. For a bright, scientifically inclined young woman in the 1960s, a nursing career simply seemed the thing to do, and Shank embarked on a distinguished one. She earned a master’s degree at Boston University and became an assistant professor at the BU School of Nursing, where she stayed until her husband, Steve, was drafted and assigned to NATO headquarters in Belgium. The couple’s first child, Susan, was born in that country.

By Susan Maas

But subconsciously, at least, Shank still harbored the dream of becoming a physician. Living in Minnesota several years later, she started to think about changing the direction of her career as the youngest of her two daughters approached school age.

"When Mary was 2 years old, I began to think about going back to work," Shank says. "I considered getting a Ph.D., but nothing seemed quite right." It dawned on her that for years she'd been avoiding the inevitable: medical school.

Shank's husband wasn't at all surprised to hear her revelation. "His response was, 'What took you so long?'" she says with a laugh.

Leadership Goals

Today, in addition to working with three partners in her Plymouth-based private practice, Shank serves as an assistant clinical professor in the University of Minnesota's Department of Dermatology. She also manages to find a great deal of time to serve her peers.

Shank's involvement in the MMA began during her tenure as president of the Minnesota Dermatological Society in 1991-92. "No one wanted the job of going to [the MMA's] Interspecialty Council meetings; I thought it was something we should do," she says. Later, a dermatologist serving on an MMA committee asked her if she'd like to be an MMA delegate. In 1993 Shank also joined the MMA Committee on Communications; her service on that committee, which she calls "enormously fun," has been a highlight of her activism in the association, along with chairing the Strategic Planning Committee.

Maintaining and improving membership levels is one of Shank's key challenges, a concern underscored by national trends. Membership levels in the American Medical Association are declining sharply—in

1960, 75 percent of U.S. physicians belonged to the AMA; today, only 36 percent are members, according to the *American Health Line* news digest. While MMA membership rates are substantially healthier—62 percent of Minnesota physicians are members—what's happening at the national level cannot be ignored, Shank says.

"I'd like to think [that the MMA has higher membership levels]

because we have been somewhat more responsive to the needs and priorities of our physicians," Shank says.

"But we have more to do. We must continue to provide a voice for physicians in the Legislature and in dealing with other players within health care. For instance, the MMA will be physicians' most important resource in dealing with the intent of other professions to expand their scope of practice."

Like several of her predecessors, Shank is hoping to find ways to make the MMA more diverse—to attract more young doctors, physicians of color, and women into organized medicine. Shank is only the second woman in the MMA's histo-

ry to hold the office of president.

"Most younger women are trying to establish a practice and raise a family at the same time," Shank notes. "Also, I suspect that many don't realize the benefits organized medicine can bring to them. There are the political benefits, of course. But I also don't think they appreciate how valuable, and how satisfying, the collegial relationships are. I learn from [fellow MMA activists], and I enjoy the friendships."

Two MMA leaders whose expertise and fellowship have been invaluable to Shank over the past several years are Carolyn McKay, M.D., and Audrey Nelson, M.D. "[Carolyn] helped educate me about issues, urged me to increase my involvement, and basically helped me feel a part of things here," Shank says. And Audrey Nelson gave a talk at the 1995 MMA

*Incoming MMA President
Judith Shank, M.D.—only the second
female president in MMA history—realized
her long-held dream of becoming a physician
later in life, after a distinguished nursing career.*



PHOTOGRAPH BY JOHN NOLTNER

Annual Meeting that influenced Shank a great deal.

"She gave a lot of sound, specific advice that I've found extremely useful. She said, 'Keep your mouth shut until you know what you're talking about; learn how to run a meeting; and read [the book] *Hardball for Women*.' I did, and I've passed it along to my daughters, and they've passed it on to friends."

Another of Shank's primary goals for her presidency is repeal of the provider tax. "I think it's poor public policy and a real thorn in the flesh of Minnesota physicians," she explains.

Shank's leadership in other arenas has intersected with her MMA activities. She has served on the board of directors of MELD (formerly Minnesota Early Learning Design), a nonprofit agency that provides parenting classes. Through her work with MELD, Shank became a strong believer in parent education. She was one of the driving forces behind the MMA's award-winning "Prescription for a Healthy Baby" campaign, which generated new interest statewide in parent education.

Early Obstacles

Shank was nearing her 36th birthday when she started medical school in 1978. She feels grateful to serve as an example to people who come to the study of medicine later in life. "I think if you have that passion, you at least owe it to yourself to see if you can achieve it," she says.

"I spent years feeling sorry for myself and finally decided I had to at least try."

When she decided to pursue a career as a physician, Shank hoped for a positive reaction from her earliest medical role model: her father. "He was very worried when I said I was going to do this," she recalls. "I was married and I had two children; he was concerned that it simply wasn't possible." As she neared completion of her premed coursework, Shank called her parents to share the news of her acceptance into the U of M Medical School.

Her mother congratulated her, then told Shank that her father couldn't come to the phone. "He's busy running around the neighborhood telling everyone!" Shank's mother said.

Shank was drawn to dermatology after doing a rotation in that specialty and finding it fascinating—"and manageable for somebody with two kids." Her early mentors included the distinguished dermatologists Milton Orkin, M.D., William Gentry, M.D., Robert Goltz, M.D., and Nadine Smith, M.D. "[Smith], as far as I know, was the first and only woman dermatologist in the Twin Cities for a long time," Shank says. But top on her list was the supportive neighbor who covered Shank's share of carpooling while she returned to school.

Before beginning her "second life" as a physician, Shank had another battle to fight: an addiction to diet

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pills and alcohol. She successfully completed treatment in the early '70s, before starting medical school. Shank then spent some time volunteering at a chemical dependency counseling center and later, during medical school, was part of a panel presentation on the subject.

"I've been sober for 25 years; it doesn't define my life anymore," Shank says. "But it's an important historical thing. I've always been very up-front with anyone who would have a need or interest in knowing."

"I actually told the dean of the medical school [before applying] that I was an alcoholic. He said, 'We don't care if you're an alcoholic, but you're too old.' I fretted about that for about two days, then applied."

However, Shank's past chemical abuse did become an issue when she applied for her license—a full decade after completing treatment. Weeks after sending her application materials to the Board of Medical Practice, Shank had received no response. After making several calls, she finally learned from a secretary why her license wasn't showing up. "She said to me, 'You didn't have *problems*, did you?' Apparently no one had ever answered 'yes' to that question on the application. There was no way I could lie," Shank says.

"The upshot of it was, I had to get my husband's former law partner to write them a letter. They wanted all my records from treatment, and I had to appear before the board to talk about my use 10 years earlier," Shank

says. "The thing that was really interesting was that they just didn't want to deal with it at all." She says she's glad to see a growing recognition that physicians and aspiring physicians—however bright and gifted—are human beings. For too long, many people both inside and outside the profession seemed to have confused the goal of perfection with perfection itself. Trying to live up to the myth of physician infallibility hasn't served anyone particularly well, Shank believes.

The blend of self-assured competence and genuine warmth that Shank projects is what most patients hope for in a physician. Capable yet approachable, she's as liked as she is respected. In a profession that's notorious for healthy egos, Shank seems conspicuously modest.

"I do my best," she says. "I'm not brilliant—I can think of several colleagues who are much more talented than I am. I've had lots of good opportunities; I've been lucky."

Shank's MMA colleagues, however, aren't willing to give luck too much credit for her success. MMA Board Chair Paul C. Matson, M.D., says Shank is a skilled and diplomatic leader: "Dr. Shank has that rare ability to bring forth ideas and concepts to a group in a way that makes all members feel they've contributed." **MM**

Susan Maas is a writer at the Minnesota Medical Association.

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Lynne Ogawa, M.D.

Early in medical school, I read a history of women in medicine and was struck by how relatively recently—about 150 years ago—the pioneering Elizabeth Blackwell entered the field. My proximity to such trailblazers became even more apparent when a kind and amazing woman introduced me to her circle of friends, most of them older women doctors.

In my junior year at the University of Missouri, my partner and I rented an apartment in an old home owned by a retired physician, Dr. Chaille Chiasson King, and her husband, John. The couple took us under their wing after discovering we were both headed into medicine. They even decreased my rent when my partner was accepted to optometry school in another state and I was strapped for money. I was on the waiting list for medical school but didn't get in that year.

Shortly after I started graduate school, Mr. King was diagnosed with squamous cell carcinoma of the lip and mouth. He died a few months later, around the time I was reapplying to medical school. Even though Chaille had to sell the house, we still kept in touch regularly. On one occasion, she invited me to her home for a lecture by a physician who worked in a base camp in the Himalaya Mountains in Nepal. Chaille and her husband had traveled extensively and had made many friends around the world.

Chaille was originally from New Orleans, and she told stories with an ever-strong Louisiana accent. She was a small woman, but when she entered a room, people noticed. Her voice was crisp, clear, exceptionally strong—slightly intimidating, but in a pleasant way.

She was one of only two women in her medical class at Tulane University. After training in psychiatry, she came to Columbia, Missouri, to work for a small women's college—she told me how much she loved working with college students. That job was followed by more than 30 years in private practice as a psychiatrist. In Columbia, she became friends with other women physicians; their numbers were small early on, and Chaille watched with pleasure as their ranks increased.

Just before I started my third year of medical school, Chaille decided it was time for me to meet her colleagues. Being the Southern lady she was, she invited us all to a luncheon. I had no idea what to expect. When I arrived at the downtown restaurant, Chaille was unloading her car—a waiter carried armloads of bound journals and other items, gifts for me. Among them was a bound copy of the very first *New England Journal of Medicine*, which she and her colleagues had signed.

The table was filled with M.D.s and Ph.D.s ranging in age from 40 to 80 and representing family practice, internal medicine, ob/gyn, psychiatry, and nutrition. As we began eating the Italian meal of pasta, salad, and spumoni that Chaille had ordered for us, the women took turns sharing stories and advice with me. Chaille started by telling me how her father, a physician, had felt about having only daughters—and how both she and her sister attended medical school and became physicians. Dr. Rodgers, a graceful, gray-haired ob/gyn, talked about her residency in St. Louis, when residents actually lived in the hospitals during training. She had no dressing room in the OR because there was a nurses dressing room and a doctors dressing room—and all the doctors were men. Each

woman told of battles she'd fought to be recognized in medical school. The most wonderful part of their stories was the sense of pride and accomplishment they expressed—a sense they passed on to me. I left that luncheon with more than 100 years of experience as a woman physician.

Over the next two years of medical school I needed to go back to that luncheon often. Every time an attending ignored me in favor of a male peer,

every time I heard a sexist joke, every time I was called “nurse,” I remembered how hard these women had worked to get me where I was. They had encountered the same prejudices, and they had survived and thrived. I carry their stories with me like an amulet, a source of power and strength. Their support empowered me to speak up to the attending, to squelch the sexist joke or simply walk away, to politely explain that I was not a nurse, but soon to be a physician.

I recently completed my third and final year of residency in family practice. I chose a residency with 50 percent women faculty. Now I find it is my turn to give back. I visit junior high and high school classes

to talk to young women about my career in medicine, and I am currently a community medicine fellow working with and teaching medical students and residents. One day I hope to hold a “luncheon” for some young woman to pass along my pride as a woman physician and my personal connection to our history, much like what I gained from my good friend Dr. Chaille Chiasson King and her peers. **MM**

Lynne Ogawa is a fellow in community medicine, with a focus on adolescent health, at Ramsey Family Physicians in St. Paul, Minnesota.



ILLUSTRATION BY DAVID YAFFE

It was a tough call. Interested in both pediatrics and family practice, Sonya Redetzke found herself wavering between the two specialties as she entered her third year of medical school.

Then she met Lisa Spatz, M.D., a family practice physician at Smiley's Family Practice Clinic in Minneapolis. For several weeks throughout the year, Spatz served as Redetzke's teacher and mentor during her elective rotation at the clinic. By the end of the rotation, Redetzke had made up her mind.

"Dr. Spatz's enthusiasm for what she does definitely comes across in the way she treats the people she cares for, and her

Women Physicians Teach THE NEXT GENERATION

*For young women entering
work and family balance*



Catherine Wittgen, M.D., says her mentors were tremendous—they all just happened to be men in the male-dominated field of vascular surgery. Today Wittgen serves as a role model for students such as Rachel Zent, pictured above (left) with Wittgen.

enthusiasm rubbed off on me," says Redetzke, now a fourth-year student. "[As a student], you really want to make sure that you're making the right decision about a specialty," she continues. "I had a lot of questions about what I wanted to do, and Dr. Spatz was so easy to talk to. I just can't imagine working with a better physician or teacher. After my experience at the clinic, I pretty much decided that I wanted to work in family practice."

Others have clearly shared Redetzke's endorsement. Earlier this year, Spatz received the Minnesota Academy of Family Physician's 1997-98 Teacher of the Year Award.

Like Redetzke, many women in medicine have found that a mentor can be a valuable source of advice, support, and encouragement as they go through medical training and make choices that will have lasting effects on their career and family life.

Coming Full Circle

For a good part of history, the model for medical education was the apprenticeship system, which provided students with both factual and contextual learning. Sometime around the turn of the century, however, medical education moved into the classroom. "There were a number of practitioners who thought that the apprenticeship system was too limiting because students were learning only one

individual's methods, good, bad, or ugly," says Tom Day, M.D., director of family practice residency at the University of Minnesota–Duluth.

While classroom-based, clinical-style education presented some benefits, other things were lost in the bargain—such as an understanding of the social and personal issues surrounding illness that can only come from working in real-life situations, Day notes. It wasn't until the 1950s and '60s that individual mentoring began to regain favor in the medical community.

Day oversees 30 family practice residents at UMD each year, all of whom spend part of their time working one-on-one with physicians from Duluth hospitals. Often, this means accompanying a physician on visits to small-town clinics in rural Minnesota, where residents find out how diagnostic medicine and treatment translate to settings outside the hospital environment.

father and the family pediatrician, who, Wittgen says, was like a grandfather to her. Her father never pushed surgery as a career, but once he knew she was interested, he fostered her exploration of the field. "He was very good about pointing out female surgeons whenever our family went to national meetings with him," she says.

Unlike Wittgen, most high school students don't have a physician parent to guide them, but young people can explore medical careers through a growing number of programs.

In Minneapolis, Roosevelt High School's Health Careers/Medical Magnet program pairs juniors and seniors with medical professionals who serve as mentors over a 10-week period, teaching the students about career possibilities and giving them some hands-on experience. At Hennepin County Medical Center (HCMC), for example, students might practice plac-

icine today, a mentor can bring perspective on career and clinical issues, what it really means to be a practicing physician.

"An understanding of caring for the whole person comes best when we put students or residents elbow-to-elbow with a person they can identify with as a mentor, a future example of themselves," says Day. Not only do students observe their mentors' practice styles, skills, and interaction with patients, they also learn something about how physicians balance their own life issues with their medical practice. "Those things get lost when the focus is on disease, anatomy, and physiology," says Day. "The humanity of medicine is dropped right out of the picture."

Reaching Out to Tomorrow's Physicians

Catherine Wittgen, M.D., began "rubbing elbows" with surgeons in the operating room the first chance she got. The daughter of a surgeon, Wittgen found her way into the OR at age 15, volunteering to clean floors and surgical instruments. "I just wanted to be there and have the chance to see what was going on," she recalls. The next year she was hired as a surgical technician, and she has worked in the operating room ever since. Today she is medical director of the Surgical Intensive Care Unit and director of the Peripheral Vascular Surgery Program at Regions Hospital.

"I saw my share of the stereotypical surgeons screaming and throwing things in the OR, but I also saw surgeons who, no matter what the circumstances, didn't do that. So by the time I was going through school, I knew that I didn't have to be that way in order to be a surgeon," Wittgen says. Her interest in medicine was sparked at an early age by both her

ing electrodes on other students in the sleep lab, handle surgical instruments in the OR, or try slicing an apple with a surgical laser beam, says Kathy Christofferson, coordinator of the Medical Magnet program at HCMC. Roosevelt students also have the opportunity to shadow medical staff at various Twin Cities hospitals, including HCMC, which has participated in the program since its inception in 1990. "If students are interested in health careers, it's critical for them to have experience interacting with people in the medical field," Christofferson says.

Mary Arneson, M.D., an occupational medicine physician at HCMC, has worked with Medical Magnet students for several years. She sees her role as teaching students not only something about occupational medicine, but also about the realities of the workplace.

"The expectations of the TV generation ... take awhile to overcome," Arneson says with a soft chuckle. "Often I'm taking somebody with ideas of a fast-paced, dramatic medical show and showing them what a realistic experience is." Students also learn how to interact and behave in the work environment, a very different culture than the one they know at school.

When a student is shadowing her, Arneson asks one or two patients for permission to have the student in the room during an examination. There, the student sees that caring for patients means more than treating injuries, Arneson says. It also means addressing other issues that might affect the patient's life, such as

STORY BY KATIE COLÓN & PHOTOS BY TERRY GYDESEN

applying for workers' compensation or making arrangements for rehabilitation. It means knowing how to ask questions to find out, for example, if a patient's difficulty returning to work has to do with the injury itself or with a conflict with the supervisor.

"I tell the students that [occupational medicine] is one option and explain to them how it might compare with other options," says Arneson.

In the spring of 1997, more than 40 women physicians belonging to the Minnesota Medical Asso-

OPPORTUNITIES FOR STUDENTS OF COLOR

Laureen Ojalvo is just starting her first semester of college, taking a premed track at New York University. But she got an early jump on her career path in 1997 by applying for one of the mentorship programs available to students of color.

having someone like her to support me in the community, someone who will say, 'I'll help you and show you what you have to do, and I'll be your friend along the way.' "

This summer more than 225 students, from 12

years old to college age, participated in a variety of summer programs offered by the Multicultural Institute. Programs include everything from the Health Careers Opportunity Program (HCOP), which provides academic enrichment, to mini-internships to intensive research apprenticeships. In addition, the institute's HCOP Club provides ongoing opportunities for students to develop mentoring relationships.

"Ultimately, we hope to impact health care in communities that don't have good health care status and to increase cultural competence in medicine," explains Jaki Cottingham-Zierdt, institute director.

The youngest students, aged 12 to 15, take part in the Health Sciences Vision Quest—a six-

week residential camp sponsored by the institute and Upward Bound. These inner-city students from Duluth and Minneapolis have the potential to become first-generation college students and have expressed interest in a health career.

Students in the institute's other programs must be economically, educationally, or socially disadvantaged. "Our programs are designed to help students develop their skills and confidence and to increase the likelihood that they will become practicing health care professionals," Cottingham-Zierdt says.

Any high school student of color from the Twin Cities metropolitan area can participate in the Careers Mini-Internship Program, shadowing a health



Harvard freshmen and twin sisters Akuorkor (left) and Akweley Ablorh got a taste of biomedical research during a summer program sponsored by the University of Minnesota's Multicultural Institute.

"I've known since I was 6 that I was interested in medicine," says Ojalvo, who participated in the Research Apprenticeship Program (RAP)—an intensive, eight-week, biomedical research program sponsored by the Multicultural Institute, part of the University of Minnesota's Academic Health Center. Not only did RAP give her a valuable opportunity to work in a lab setting, she says, but the experience resulted in a lasting relationship with her project mentor, Lisa Brosseau, Sc.D., an industrial hygienist in the University of Minnesota's School of Public Health.

"She's given me lots of advice on the college scene and helped me by writing recommendation letters for college," Ojalvo says. "It's really nice

ciation (MMA) responded to a call for mentors for the Physicians of Tomorrow Mentoring Program—a national, collaborative effort between the Girl Scouts of the U.S.A. and the American Medical Association. Locally, the program is organized by the Girl Scout

care professional part time for five weeks during the summer. And juniors, seniors, and high school graduates can apply for the RAP, as Lauren Ojalvo did.

Mentoring relationships like the one Ojalvo and Brosseau developed are wonderful, says Cottingham-Zierdt, but they cannot be forced. “More often than not, if you try to force a mentoring relationship, it’s not going to work out well. Hypothetically, you can have 20 health care professionals committed to being mentors and 20 students who want to be mentored, but there’s no guarantee that there will be a good fit. For mentoring to work, there needs to be real chemistry between the individuals involved, as well as mutual respect and a certain level of commitment.”

RAP graduates Akuorkor and Akweley Ablorh lucked into a good fit with their mentors. Akweley was matched with University of Minnesota histologist Colleen Forster, while Akuorkor worked closely with Edward Combe, Ph.D., D.Sc., at the university’s School of Dentistry. The twin sisters, who both entered Harvard University this year, say their RAP experience helped solidify their decisions to pursue degrees in chemistry and premed, respectively. “It was a real eye-opener,” Akuorkor says. “I learned that chemistry is not done in a vacuum but relates to other parts of medicine as well.”

Akweley adds, “Last year I hadn’t quite decided that I wanted to go into premed. RAP gave me a chance to try it out, and now I know for sure that it’s what I want to do.” Her mentoring experience was a valuable resource, she adds. “I think [mentoring] is something I’d like to do later in my life.”

While programs such as RAP helped the Ablorh sisters define their goals, having a role model at home was also important, they say. Their mother, Philomena Ablorh, whose educational background is in chemical engineering, encouraged their interest in the sciences.

“In school, none of the science subjects seemed to relate to anything in the real world,” says Akuorkor. “My mom worked hard to show me how science did relate to things in life and that it actually could be fun.”

—KC

Council of St. Croix Valley and the MMA’s Committee on Women Physicians. It is open to high-school-age Girl Scouts in the St. Croix Valley area.

During last year’s program, participants attended workshops where they listened to and asked questions of physicians and medical students and learned about health care issues such as medical ethics. Then students were matched with physicians in a variety of specialties for two half days of shadowing.

“I thought [Physicians of Tomorrow] was a perfect way to help me decide if I want to be a doctor,” says Amanda Martinson, who was a high school senior when she participated in the program.

Her father is an internist, and Martinson says she saw plenty of male physicians when she was growing up. “But there were very few women that I knew of,” she says. She appreciated the chance to hear about medical careers from a female perspective. “I met women who are practicing medicine and balancing that with having a family. I think it’s great to know that you can have both.”

Her interest in obstetrics led to her being matched with Joan Dawson, M.D., an ob/gyn at the Forest Lake Clinic in Forest Lake, Minnesota.

“Dr. Dawson made my first day with her the best I could ever have imagined,” says Martinson, who watched as Dawson performed a cesarean section. “I was right there in the room, up close, and she explained everything to me as she went along.” On Martinson’s second day of shadowing, she experienced the clinical side of obstetrics and gynecology.

“I came out of the whole experience with a greater interest in medicine,” she notes. She recently started classes at Smith College in Massachusetts and is leaning toward a premed course of study.

Catherine Wittgen volunteers for the Physicians of Tomorrow program and also speaks to students in public schools. “The most important thing with kids when you’ve got them in front of you is to be honest,” she says.

“[Young people] have to know that any question is fair game and will be answered. I’ve had kids ask me everything from ‘Are you married?’ ‘Do you have children?’ and ‘How much money do you make?’ to ‘What do you do if you make a mistake in surgery, or if someone dies and you’re there?’ Wittgen says. “Anyone who is thinking about a career wants to talk to someone who’s been there and done it. If that person isn’t honest with them, what’s the point?”

Into Their Clutches

Perhaps the best known formal mentoring program for medical students in Minnesota is the preceptor program at the University of Minnesota–Duluth.

“It’s mentorship at its purest,” says Jim Boulger,



Third-year medical student Jodi Sims (right) sought out emergency medicine specialist Michelle Biros, M.D., as her adviser after hearing other students praise her.

Ph.D., program director. "We send our first-year students out and into the clutches of our colleagues almost immediately. It's pretty clear that the students are not going out at that point with a tremendous amount of knowledge and skills, so they really are working with a mentor, not a formal instructor. There's an art and a craft involved in medicine

that they can only learn through the eyes of their mentors."

First-year students spend 12 half days with their mentors, observing what it's like to actually be practicing. During the second year, each student literally moves in with the physician and his or her family for a three-day period every trimester. "They really get a picture of what life is like for the physician, whether it's a snowmobile accident that gets them up in the middle of the night, charting all day, or an afternoon off," Boulger says.

At the university's Minneapolis campus, first- and second-year medical students can participate in a one- to two-day Medical Student Internship Program, a physician shadowing program sponsored by the Hennepin and Ramsey medical societies. The Medical Alumni Society also offers a mentoring program for second- and third-year students. Both programs match students with physicians in a specialty area of the student's choice.

A great deal of mentoring also grows out of student-adviser relationships. Michelle Biros, M.D.,

an emergency medicine physician at Hennepin County Medical Center, began advising medical students nearly a decade ago. Besides talking about courses and rotations, Biros helps students discover what they like and dislike about various aspects of medicine and how the field relates to their own interests.

"When I was in medical school, advisers mainly helped students make appropriate choices for rotations," Biros says. "Discussions about careers and future choices were rare."

Despite the demands

"Anyone who is thinking about a career in medicine, be honest with them, what's the point?"

of her schedule at HCMC and her duties as editor-in-chief of *Academic Emergency Medicine*, Biros believes it is important to find the time to advise and mentor young people. "I consider it part of the job of academic medicine," she says.

Jodi Sims, for one, appreciates the time Biros devotes to mentoring. When Sims, a third-year medical student at the University of Minnesota, began looking for an adviser last year, she quickly set her sights on Biros. Sims has a strong interest in emergency medicine and had seen Biros at a Minnesota emergency medicine forum. "I watched her interact with peers and with residents there and I liked what I saw," recalls Sims, who is president of the university's Emergency Medicine Interest Group.

She looked up information about Biros on the Internet and talked to a few of the physician's advisees. "She's wonderful," one student told Sims. "She's always busy but will talk to you as long as you want." Sims also figured that Biros would know the ins and outs of applying for an emergency medicine residency at HCMC, one of the top programs in the country. Sims appreciates Biros's involvement in the world of emergency medicine: "She's someone who's really up on the latest, who's way on top of everything."

Biros notes that her role as an adviser or mentor is often determined by the student. "Some only want

advice on courses. Others are comfortable with other kinds of advice and want to talk about topics that are not directly related to the specialty," she says. Some students want to talk through their career choice. "I consider it part of my responsibility to point it out to a student if I feel that emergency medicine is not for them. I would rather have somebody make the right career choice based on personal interests, strengths, and weaknesses than go into emergency medicine because that's what they said they were going to do."

Not Just for Students

The value of a mentoring relationship extends beyond medical school, says Julie Hauer, M.D., director of the pediatric residency program at the University of Minnesota. Residents also benefit from having mentors.

"I find that the majority of residents have very informal mentoring relationships," Hauer says. "They get input from the physicians they work with, get a sense of what other physicians do and of what different clinic practices are like. But they don't appreciate

ly during the continuity care clinic. Hauer tries to match students and physicians based on mutual interests. "Sometimes residents click with their preceptors, sometimes they don't," she says. Halfway through the first year, residents must formally identify a physician to act as their adviser and mentor, either in a specialty area or in general pediatrics.

For pediatric resident Julie Boman, M.D., the initial match with Margie Hogan, M.D., a pediatrician at HCMC, was a hit. "She has become an adviser with regard to my career interests as well as [clinic issues]," Boman explains. "She's also my good friend, knows my personal life, and offers me support. I can go to her and say, 'Here are my interests, what do you think?' and she helps me sort things out, or redirects me if she thinks it's necessary."

As in any residency program, long hours and a fair amount of stress are part of the package, says Boman, who is married and has a 2-year-old daughter. Boman views Hogan as a role model—a woman who balances a successful medical career with other community

nts to talk to someone who's been there and done it. If that person isn't

the benefit they may gain by having someone to literally nurture them along—to look out for them and track their growth and training."

On the other hand, says Hauer, more and more accreditation boards are requiring residency programs to offer mentoring. In June, Hauer was one of five recipients of the Teacher of the Year award presented by residents in the university's Department of Pediatrics for her work with residents on a developmental disabilities rotation at Gillette Children's Specialty Healthcare in St. Paul.

At the beginning of their first year, University of Minnesota pediatric residents are assigned an adviser—a primary care physician who also serves as preceptor or mentor, working with the resident week-

work (including her well-known work in the area of child abuse) and her home life. "[Dr. Hogan] has a real gift," Boman says. "I can go in to see her feeling like



Julie Hauer, M.D. (left), directs the pediatric residency program at the University of Minnesota, where she mentors Sherry Crow, pictured above, and other students. The Pediatrics Department named Hauer a Teacher of the Year this year.



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everything is falling apart and leave there feeling terrific."

But good role models and mentors for women don't have to be female, Catherine Wittgen points out. Wittgen chose a field dominated by men. In 1996, she became the first female vascular fellow to graduate from Massachusetts General Hospital at Harvard Medical School.

"My mentors were all male," she says. "I picked people I had the most in common with, whose advice I valued the most, and OK, they happened to all be men. What is important is that they were tremendous role models."



Reaping the Rewards of Mentoring

While mentoring presents obvious benefits for students and residents, many practicing physicians say the rewards can be just as rich for those who do the mentoring.

Working with students and residents is a wonderful way for physicians to stay up-to-date, Lisa Spatz says. "It's really fun to work with people who are enthusiastic and supermotivated to soak up all the knowledge they can get. [The students] have questions, so you either have to know the answers or find out. Teaching is the best way to learn, and it keeps you excited about what you're doing."

Biros also enjoys being part of the introspective process that students and residents go through on their way to becoming physicians. She notes, "It's fun to see young people grow up and mature in front of your eyes—to see them go from didactic students to clinical students to students of life." MM

Katie Colón is a free-lance writer in Ramsey, Minnesota.



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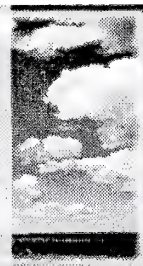
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Maternity and Family Leave Policies in Rural Family Practices

Sarah Mainguy, M.D., and Byron J. Crouse, M.D..

ABSTRACT

To help recruit and retain physicians, especially women, rural family practice groups need to establish policies regarding maternity and other family leaves. Also important are policies regarding paternity leave, adoptive leave, and leave to care for elderly parents. We surveyed members of the American Academy of Family Physicians in rural practice in 1995 to assess the prevalence of leave policies, the degree to which physicians are taking family leave, and the characteristics of ideal policies.

Currently, both men and women physicians are taking family leaves of absence, which indicates a need for leave policies. Furthermore, a lack of family leave policies may deter women from entering rural practice.

The growing number of women in medicine, particularly in family practice, has prompted greater interest and demand for effective maternity leave policies. Currently, women make up 43% of medical school entrants¹ and 41.5% of residents in family practice residency programs.²

Demand is also increasing for policies regarding paternity leave, leave to facilitate adoption, and leave to care for elderly parents. The last has drawn increased attention because of the aging population—more people are caring for elderly parents in the home, and caregivers are often sandwiched between child care and elder care. Many women physicians find themselves in this “sandwich generation,” first described in 1951,³ because they often delay childbearing^{4,5} and most often assume the caregiver role.⁶

Family practice residency programs⁷ and teaching hospitals⁸ have been active in formulating leave policies, but practice groups have lagged behind. In a 1987 study, only one-third of physicians in group practice reported that their practice had a stated maternity leave policy.⁹ The study also found that practice groups with eight or more partners and multispecialty groups were more likely than smaller groups to have formal policies. Smaller practices may not have policies because they choose to individualize leave options or because they have not encountered a need for such policies.⁹

While there has been an increase in the number of women entering family practice in general, a lower percentage of women than men join a rural practice, according to James Boulger, Ph.D., director of preceptorship and alumni affairs, University of Minnesota–Duluth School of

Medicine (personal communication, January 1997). One possible barrier is the concern of balancing family life and professional responsibilities, which may be perceived as more difficult in a rural setting with a small group or solo practice.

Our study sought to determine the prevalence of family leaves and family leave policies and to quantify and characterize leave policies in rural family practices. We also asked study participants to describe an “ideal” family leave policy.

METHODS

We designed a 19-item self-administered questionnaire that asked for respondents' gender, age, marital status, practice and community size, and whether the respondents had taken a leave of absence for any reason. The survey also asked physicians to describe the maternity/family leave policies in their current practices and to describe what they would consider an ideal policy. We also solicited comments concerning physicians' individual experiences with maternity and other family leaves of absence.

In June 1995, we mailed surveys nationwide to 505 members of the American Academy of Family Physicians (AAFP). We chose a random sample of 100 men and 405 women family physicians who were born in 1950 or later and who were involved in direct patient care in a self-described rural setting. We sent a second mailing to all nonrespondents about a month later. The sample was weighted in favor of female family physicians because maternity leave is the most common family leave. We surveyed a smaller sample of male physicians to determine any major differences in their perspective.

Participants completed the survey

Table 1

Respondent characteristics (n=213) displayed as averages or actual respondents

Age (average):	36.8 (range 29-48)	
Gender:		
Male	21	(21% response rate)
Female	191	(47% response rate)
Average date completed residency/internship:	1988	
Marital status:		
Married	173	
Single	27	
Household income based upon:		
One income	81	
Two incomes	115	
Other	4	
Practice type:		
Solo	37	
Single-specialty group	90	
Multispecialty group	51	
Other	22	
Average group practice size:	10.3 (range 1 to 300)	
Status in practice:		
Partner	80	
Employee	83	
Other	34	
Community size:		
Rural (<2,500)	46	
Small town (2,500-7,499)	70	
Large town (7,500-19,999)	51	
Small city (20,000-49,999)	28	
City (50,000-99,999)	3	
Urban/suburban (>100,000)	1	

anonymously and were asked to include a copy of their practice's maternity/family leave policy if available.

RESULTS

A total of 213 (42%) surveys were returned. Participant characteristics are described in Table 1. Other than a lower response rate for the men, there were no significant demographic differences between male and female respondents.

Eighty respondents reported that their practice had no leave policy whatsoever, and 39 reported that leaves must be negotiated/arranged at the discretion of partners or determined as needed. This indicates that, overall, 60% of physicians surveyed were in practices with no formal policy. In contrast, more than half of the respondents (57%) reported having taken a maternity or other family leave of absence.

For those practices with formal policies, the mean maximum leave time available was 7.6 weeks paid and 11.9 weeks unpaid. The total mean maximum amount of leave time available was 11.9 weeks. Nearly all of the policies allowed for maternity leave, but relatively few specified paternity leave (n=56), leave to facilitate adoption (n=50), or leave to care for parents (n=54). The majority of practices with policies had partners cover patient care during leaves of absence; only 11% hired a locum tenens during a leave of absence. The vast majority of practice policies provided for the continuation of insurance benefits (92%).

Respondents described what they envisioned as an ideal policy for their individual practice. A majority included continuation of benefits during leaves. A description of these ideal policies appears in Table 2 (see page 24).

Analysis comparing responses of male and female participants revealed no significant differences in existing leave policies or ideal policies. Similarly, analysis controlling respondents' region or group size showed no significant differences.

DISCUSSION

Sixty percent of rural family practices have no formal, written policy for maternity or other family leaves. This percentage is not much different from what Baker found.⁹ In 1993, Congress enacted the Family and Medical Leave Act (FMLA), entitling qualifying employees to 12 weeks of unpaid leave during a 12-month period. The FMLA does not apply to many rural practices, however, because they have fewer than 50 employees.¹⁰

A lack of maternity and family leave policies is a barrier to recruiting and retaining female providers in rural areas. Our study indicates that a majority of physicians are taking leaves, supporting the need for policies.

In practices with formal policies, the details of the policy match well with the ideal maternity policy described by survey respondents. It is clear, however, that other types of family leave policies are lacking; only a quarter of the respondents' prac-

Table 2

*Respondents 'ideal' leave policy***Maternity leave time available**

Before delivery:	3.1 weeks (range 1-6 weeks)
After delivery:	9.7 weeks (range 3-52 weeks)

Paternity leave available:	4.6 weeks (range 0-24 weeks)
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Adoption leave available:	7.0 weeks (range 1-52 weeks)
----------------------------------	------------------------------

Other family leave available:	8.1 weeks (range 1-52 weeks)
--------------------------------------	------------------------------

Paid leave available:	6.1 weeks (range 0-24 weeks)
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Unpaid leave available:	15.1 weeks (range 2-52 weeks)
--------------------------------	-------------------------------

es had policies dealing with paternity, adoption, or other family leave. As more physicians find themselves in the "sandwich generation," caring for both young children and aging parents, these other types of leave become more important.

THE IDEAL POLICY

Based on our study results, the ideal leave policy should:

- 1) be described in written form in the clinic policy guide;
- 2) be reviewed annually;
- 3) consist of three weeks of leave before delivery and nine weeks after delivery for maternity leave;
- 4) allow up to six weeks for paternity leave, adoption leave, and leave to care for parents.

In all cases, up to six weeks of salary and fringe benefits should be paid per year and additional leave time should be allowed without pay but with continuation of benefits.

CONCLUSION

Physicians negotiating employment contracts with a practice group or partner should ensure that leave policies are detailed in the contract. Legal counsel may be of assistance, and agencies or state offices of rural health may be able to provide examples of model language to incorporate into the contract. In addition, the National Rural Recruitment and Retention

Network (800-RURAL12), which helps health professionals locate suitable practices in rural areas throughout the United States, can assist in reviewing leave policies.

Leave benefits are not an issue just for new partners—maternity, paternity, adoption, and other family leave may be important to established members of a group, as well. By establishing formal policies that deal with these matters, practices will avoid perceptions of special arrangements for senior members of a group. In 1992, the American Academy of Family Physicians developed a standard parental leave policy.¹¹ However, it suggests only minimal guidelines, primarily for maternity leaves. Consider contacting the office of rural health in your state to assist with policy formulation. In Minnesota, call the Minnesota Center for Rural Health, 218/727-9390. **MM**


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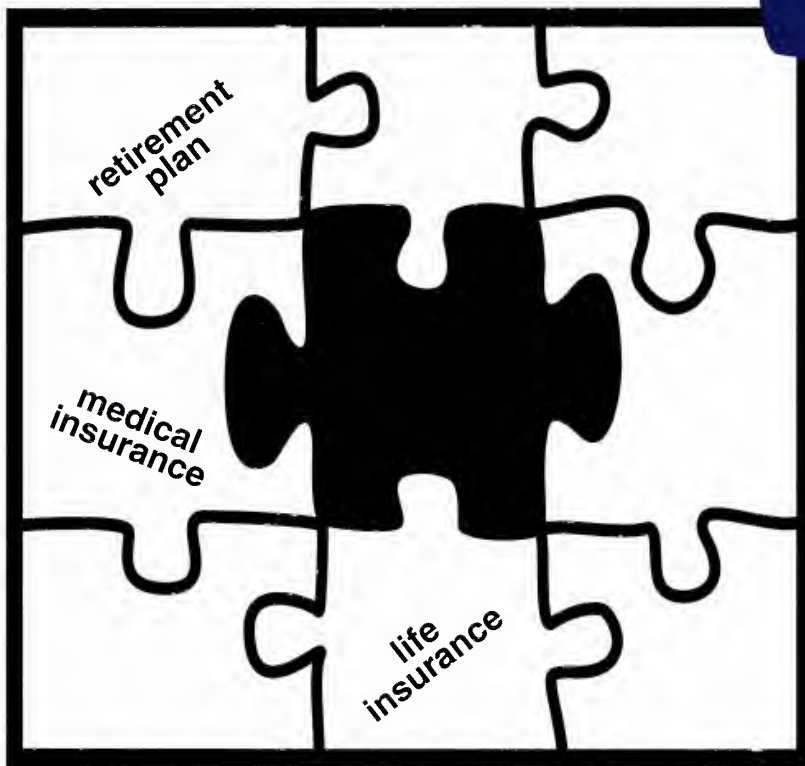
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Allergy to Natural Rubber Latex

Latex allergy is a significant problem among health care workers; hospitals and clinics can reduce the incidence of latex-induced reactions by using synthetic gloves or low-allergen, powder-free gloves.

John W. Yunginger, M.D.

Editor's Note: Latex allergy: you have read about it in the lay press, seen it on "20/20," and heard people talking about it in your hospital cafeteria. But many of us still do not know exactly what we can do and how concerned we should be. Dr. Yunginger has spent several years compiling this information and puts the issue in perspective. His work has helped our small hospital develop a reasonable approach to the problem of latex allergy and exposure.

—Barbara Yawn, M.D., M.Sc.,
Series Editor

Shortly after the Centers for Disease Control and Prevention published recommendations for "universal precautions" in 1986, the demand for disposable rubber medical gloves rose significantly. Within the next few years, increasing numbers of health care workers experienced allergic reactions to rubber medical gloves. The prevalence of latex allergy in health care workers is now estimated at 5% to 17%. Immunological reactions to natural rubber latex include contact dermatitis, a cell-mediated reaction to nonrubber chemicals contained in rubber products, and contact urticaria, rhinoconjunctivitis, or asthma, which are IgE-mediated reactions to natural rubber proteins themselves. Powdered rubber gloves are the chief source of latex aeroallergens in hospital and clinic environments. Successful management of latex allergy requires accurate diagnosis and reduced exposure to natural rubber products such as medical gloves, condoms, and balloons.

BACKGROUND

Natural rubber is derived from the cytosol or latex of the commercial rubber tree, *Hevea brasiliensis*. About 90% of harvested rubber is processed into dry sheets for manufacture of vehicle tires. The remaining 10% is used mostly to make rubber gloves and other "dipped" products, such as condoms and balloons.

Dipped products are responsible for most allergic reactions to natural rubber latex; some knowledge of their production is helpful in understanding the pathophysiology of latex allergy. For example, rubber gloves

are produced by coating porcelain molds with an emulsion of cornstarch and coagulant compound, then dipping the formers into liquid latex containing several low molecular weight accelerators, antioxidants, and preservative chemicals.¹ The gloves then pass through leaching tanks to remove water-soluble protein and excess additives, after which the gloves are cured by vulcanization, a heat-catalyzed process in which the rubber molecules are crosslinked in the presence of sulfur-containing accelerators. Finally, the gloves move through a cornstarch slurry and are stripped from the formers. Powder-free gloves usually go through a chlorination wash, which makes their surface more slippery and removes any unreacted rubber proteins and additives.

CLINICAL MANIFESTATIONS

IRRITANT CONTACT DERMATITIS

The most common reaction to rubber products is dry, irritated areas on the skin, especially the hands. This reaction is not immunological, but is due to the irritant effects of repeated hand washing, use of detergents and sanitizers, or powders added to the gloves.

ALLERGIC CONTACT DERMATITIS

Contact dermatitis is most commonly produced by rubber gloves, shoes, sports equipment, and medical devices; it appears one or two days after contact with the offending product. The dermatitis is a cell-mediated, delayed-type hypersensitivity reaction to low molecular weight accelerators and antioxidants in the rubber product. Thiuram compounds are the most common cause of contact dermatitis from rubber, usually via rubber gloves. The diagnosis of rubber contact dermatitis is based on the clinical history, and the morphology and distribution of the skin lesions; a specific diagnosis is established by patch testing with rubber chemicals.

CONTACT URTICARIA

Contact urticaria is the most common early manifestation of rubber allergy, particularly in latex-sensitive

health care workers, of whom 60% to 80% report contact urticaria involving the hands.^{2,3} Symptoms are IgE-mediated and are caused by natural rubber proteins. Symptoms appear within 10 to 15 minutes after donning gloves and include redness, itching, and wheal and flare reactions. Symptoms are often mistakenly attributed to glove powder or hand washing. In health care workers, contact urticaria may be preceded by cell-mediated contact dermatitis.³ With the increasing use of latex gloves to prevent HIV transmission, contact urticaria is occurring with increased frequency.³

RHINITIS AND ASTHMA

Inhalation of latex allergen-coated cornstarch particles from powdered gloves can evoke rhinitis and asthma in latex-sensitive persons. Most latex-sensitive individuals are highly atopic, with personal histories of seasonal allergic rhinitis due to pollens or allergic asthma due to house dust mites or animal dander.⁴ However, many health care workers with latex-induced occupational asthma have no preceding history of asthma, suggesting that latex-induced wheezing may occur as an isolated phenomenon.²

ANAPHYLAXIS

Latex-sensitive persons can experience anaphylaxis in a variety of medical care situations, including contact with bladder catheters or during intra-abdominal surgery, childbirth, or dental surgery. To date, the only deaths attributed directly to natural rubber latex allergy were caused by rubber balloon catheters used for barium enemas;⁵ these rubber catheters are no longer being produced.

LATEX ALLERGENS

Latex allergens are proteins present in both raw latex and in extracts of finished rubber products. Latex antigens can be leached from powdered rubber gloves by normal skin moisture, with subsequent adsorption onto the cornstarch powder.⁶ Latex allergens can also be adsorbed to powder inside gloves that have not been worn.⁷ When the gloves are donned or discarded, the cornstarch particles with adsorbed latex allergens become airborne and can sensitize nearby persons by inhalation or can evoke symptoms in previously sensitized persons.⁴

EPIDEMIOLOGY

There are limited data on the frequency of latex sensitization in the general population. Approximately 6% of healthy blood donors⁸ and ambulatory surgical patients⁹ have elevated latex-specific IgE antibodies in their serum, but the prevalence of clinical latex allergy is much lower than this.

Health care workers, particularly those who are atopic and who use rubber gloves regularly, are at increased risk of sensitization to latex. In questionnaire-only surveys, up to 53% of responding health care workers self-report some type of reaction to rubber gloves.¹⁰ In surveys involving both questionnaires and

either latex skin testing or immunoassays for latex-specific IgE antibodies, 5% to 17% of various hospital employee groups were documented as latex-sensitive.^{11,12} The wide range of reported prevalence is due to use of different skin test materials, small sample populations, and use of selected populations.

Individuals with myelodysplasia are at increased risk of latex sensitization as a consequence of undergoing repeated neurological, urological, and orthopedic surgical procedures, or by early, repeated contact with rubber bladder catheters and rubber gloves during removal of fecal impactions. The reported prevalence of latex sensitivity in these individuals has varied from 18%¹³ to 64%.¹⁴

Several reports have described an association between latex allergy and allergy to a variety of fruits, most often banana, avocado, and kiwi fruit. Less frequently noted are concomitant allergy to apricot, chestnut, grape, passion fruit, and pineapple. In some cases, the latex allergy has preceded the development of the fruit allergy, and in other cases, the opposite has been true.

DIAGNOSIS

SKIN TESTING

Skin testing with natural rubber latex is the diagnostic procedure of choice in Europe and Canada, where commercial extracts are available for this purpose. In the United States, no licensed commercial latex extracts are available for diagnostic use. Allergists frequently perform puncture skin testing with extracts of finished rubber products, usually latex medical gloves, but these gloves vary widely in their allergen contents,^{6,15} and systemic reactions have been reported with use of these unstandardized preparations.¹⁶ A more recent study has shown that skin testing with glove extracts or raw latex with standardized protein contents is safe and efficient.¹⁷

MEASUREMENT OF LATEX-SPECIFIC IgE ANTIBODIES

Rubber-specific IgE antibodies may also be demonstrated by immunoassay, available through diagnostic reference laboratories. When both skin tests and immunoassays are performed in the same patient groups, 50% to 90% of skin-test-positive persons have latex-specific IgE antibodies measurable by immunoassay.

CHALLENGE STUDIES

The allergenicity of powdered gloves has been tested by having patients don and remove powdered gloves inside a small provocation chamber.⁶ Nasal and bronchial inhalation challenge tests have also been used to document the allergenicity of crude latex or isolated rubber proteins.¹⁸ Rubber allergy may also be confirmed by the "use test," in which the fingers of rubber gloves are cut off and applied to the wet fingers of persons suspected of having contact urticaria to rubber.¹¹ After 30 minutes (sooner if intense itching occurs), the glove finger is removed and the reaction graded.

MANAGEMENT OF LATEX ALLERGY

LATEX AVOIDANCE

Successful long-term management of latex allergy involves documenting latex sensitization by skin test or immunoassay and avoiding rubber. Latex-sensitive persons with myelodysplasia and latex-sensitive health care workers should be provided with lists of rubber-free products for daily personal or occupational use. These individuals should not assume that rubber-free products are universally available; they should bring nonlatex examination gloves when seeking medical or dental care.

MEDICAL GLOVES

Currently, all medical gloves marketed in the United States are subject to FDA approval. Rubber medical gloves vary widely in their latex allergen contents.^{15,19} As a group, powdered rubber gloves contain more allergen than powder-free gloves.

The maximum allowable failure rate for standardized tests for leakage is 2.5% for unused surgical gloves and 4% for unused examination gloves. Studies of previously used and discarded gloves found leakage rates between 43% and 85% for vinyl gloves and between 9% and 31% for latex gloves.^{20,21} Moreover, in a study of the ability of examination gloves to exclude virus particles, polyethylene and polyvinyl gloves failed in 40% and 22% of cases, respectively, while latex gloves failed in less than 1% of cases.²² Collectively, these data suggest that substituting synthetic elastomer gloves for latex gloves may involve some sacrifice of barrier protection.

LATEX AEROALLERGENS

Hospitals and clinics may contain high levels of latex aeroallergens, which can be measured using high volume air samplers (3 l/sec) or personal breathing zone samplers (3 l/min) equipped with Teflon® filters. At Mayo Medical Center in Rochester, latex aeroallergen levels were highest (range 14 to 208 ng/m³) in work areas where powdered rubber gloves were frequently used, and lowest (range 0.3 to 1.8 ng/m³) in areas where powder-free or synthetic gloves were used.²³ Latex allergen was airborne only when there was activity in the work area; no allergen was detectable on weekends. Subsequently, the medical center phased out the use of high-allergen latex gloves,²⁴ and follow-up studies in the same work areas showed that latex aeroallergen levels had fallen to <3 ng/m³.

To confirm that powdered rubber gloves were the major contributor to latex aeroallergen levels, we conducted a 52-day, prospective, multiple crossover study in a single operating room, during which either high-allergen or low-allergen gloves were used, and we monitored latex aeroallergen levels daily.²⁵ Latex aeroallergen levels during low-allergen glove use days (range 0.1 to 3.5 ng/m³) were significantly lower than on high-allergen glove use days (range 2.2 to 56 ng/m³). On designated high-allergen glove use days, latex

aeroallergen levels were strongly correlated with the total number of gloves used.

'LATEX-FREE' MEDICAL ENVIRONMENTS

Because most IgE-mediated reactions to rubber have been described in health care workers or in latex-sensitive individuals undergoing medical or dental procedures, early efforts at allergy management aimed to establish "latex-free" clinic and hospital environments. However, many medical products are prepared from synthetic or butyl rubber, a petroleum-based product that contains no natural rubber proteins and thus poses no threat to latex-sensitive persons. Moreover, for many rubber medical products, nonrubber substitutes are not available. More recently, hospitals and clinics have focused on providing "latex-safe" environments, in which no latex gloves are worn by any personnel, and patients have contact with few or no latex accessories. By September 30, 1998, all medical devices or medical device packaging containing natural rubber latex will be required to be so labeled by the FDA.

There are anecdotal reports of latex-sensitive individuals who experienced systemic allergic reactions pre- or postoperatively that were purportedly induced by syringe plungers or stoppers in multiple-dose vials. In contrast to dipped products made from liquid natural rubber, however, dry rubber products generally have low levels of extractable protein, and extracts of these products do not produce positive skin tests in latex-sensitive persons.²⁶

Detailed perioperative nursing plans have been published for managing latex-sensitive patients,²⁷ and some protocols recommend preoperative prophylactic administration of glucocorticoids and both H1 and H2 class antihistamines for latex-sensitive patients undergoing surgery.^{28,29} In a retrospective study of children with myelodysplasia undergoing surgery, the empiric use of latex-avoidance protocols was associated with a significant decline in intraoperative allergic reactions, but the critical elements within the protocol were not identified.³⁰ Although surgery can be performed safely on latex-sensitive persons using these protocols, several groups have reported life-threatening intraoperative anaphylactic reactions despite premedication and latex avoidance.^{28,31,32} Moreover, life-threatening allergic reactions may be the presenting feature of latex allergy in up to 30% of latex-sensitive children.³³

Several latex-sensitive health care workers have brought legal suits against rubber glove manufacturers and hospitals and clinics, alleging that they have been sensitized to latex as a consequence of occupational exposure to allergenic rubber gloves. A litigant in Wisconsin was awarded \$1 million; other suits are pending. Many hospitals and clinics have resisted switching to lower allergen rubber gloves or synthetic gloves, citing increased costs. This view may be less credible if litigants are successful in other suits. When Mayo Medical Center phased out higher-allergen rubber gloves in 1993—buying greater quantities of lower-allergen gloves from fewer vendors—we saved over \$200,000 per year in

glove costs.²⁴ To reduce occurrence of latex-induced reactions, hospitals and clinics should use only synthetic gloves or low-allergen, powder-free gloves. **MM**

John Yunginger is a consultant in pediatric and adolescent medicine and in internal medicine at Mayo Clinic and a professor of pediatrics at the Mayo Medical School in Rochester.

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Improving Immunization: Centralizing Data in Clinical Files

The start of a new school year means a big push for immunization data at clinics across Minnesota. While better organized immunization data in individual patient files means clinics and physicians can work more efficiently and more Minnesota children receive their shots on time, to date this goal has been elusive. Now the Minnesota Council of Health Plans Immunization Task Force is leading an effort to help clinics statewide improve the way they chart immunization data—for the school year and beyond. The Task Force recommends that clinics consider taking the following steps:

- Devote a special section in every patient file exclusively to immunization records.
- Pay special attention to early childhood files. Infants' needs are especially challenging—they need 15 shots by the age of 15 months.
- Small steps are fine. If you are unable now to reorganize all your patient charts, at least go back through a patient's records and centralize the immunization data whenever you administer a vaccine, or when you receive a request for immunization data for school or other use.
- Mail in the attached card in this magazine to receive a help kit or other personal assistance from the MCHP Immunization Task Force. The kit contains samples of centralized record keeping techniques, information on key practice issues and lists of required and recommended immunization data.
- Every time you see a patient, you have an opportunity to prevent disease. Offer immunizations during sick child visits in accordance with the Centers for Disease Control and Prevention's immunization guidelines.
- Once your clinic's charts contain centralized immunization data, consider participating in a local or regional registry. For information about registries, contact your local public health department or Bill Brand at the Minnesota Department of Health (612-676-5144).

**Members of the Minnesota Council of Health Plans include Allina Health System, Altru Health Plan, Blue Cross and Blue Shield/Blue Plus of Minnesota, Central Minnesota Group Health Plan, First Plan of Minnesota, HealthPartners, Mayo Health Plan, Metropolitan Health Plan, PreferredOne, Sioux Valley Hospitals and Health System and UCare Minnesota. Partners in the Task Force include the Minnesota Department of Health and several local public health representatives.*

Immunization Centralization Help Request Card

Clinic Name: _____

Clinic Address: _____

Contact Name and Title: _____

Phone Number: _____

Fax Number: _____

E-Mail Address: _____

Which of the following would you be interested in receiving?

- ☐ An information packet to assist you in centralizing your clinic's immunization data
- ☐ Contact from a representative to assist in centralizing your immunization data

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ANNOUNCEMENTS



MMA Distributes FAS Posters

The Minnesota Medical Association is continuing its partnership role in the Mothers-to-be Alcohol-free fetal alcohol syndrome (FAS) campaign. MMA staff will soon begin sending FAS posters to ob-gyn clinics and to family practice clinics in greater Minnesota. The poster depicts two cocktails: a small one labeled "Your drink"; and an enormous one labeled "Your baby's drink." For more information, call MMA Director of Communications Lorrie Holmgren at 612/378-1875 or 800/DIAL MMA (342-5662).

Crabb Is a Director of MEDPAC Board

Kenneth W. Crabb, M.D., an ob gyn who lives in Woodbury and practices in St. Paul, has been named a director of the MEDPAC Board for Congressional District 6. His term begins in September.

Members Offer Large, Eclectic Array of 1998 Resolutions

From endorsing irradiation to defining utilization review as the practice of medicine, many of the resolutions slated for consideration by the 1998 MMA House of Delegates promise lively debate. As *MMA News and Views* goes to press, 67 draft resolutions have been submitted—significantly more than at this time last year. And while it's reasonable to predict easy passage for some, as always, several are likely to spur controversy.

When the House convenes at the Radisson in St. Paul on October 8, delegates will weigh ethical questions, set legislative priorities, and carry on the MMA's role in shaping Minnesota's public health agenda.

Health Economics

Like last year, several resolutions stem from frustration over the impact of managed care arrangements on patient care. Several deal with problems relating to payment to physicians by health plans; one calls on the MMA to investigate statutory barriers to the formation of "provider-driven care systems."

A resolution asking the MMA to support legislation making managed care organizations legally liable for treatment decisions seems all but certain to provoke passionate debate. A similar measure calls for joining the AMA in endorsing the Patients' Bill of Rights Act of 1998. Two resolutions dealing with utilization review—including one calling for final utilization review decisions to be made only by physicians licensed in Minnesota and currently practicing in the same specialty as the doctor providing care—will probably meet some opposition.

1999 Legislative Priorities

To no one's surprise, several resolutions call for elimination of the 1.5 percent provider tax; each suggests that tobacco settlement funds are a more appropriate source of support for the Health Care Access Fund. Many resolutions also call for using tobacco settlement dollars for other health-related purposes, including antitobacco programs and medical education.

Two resolutions anticipate another legislative push to extend the statute of limitations for medical malpractice. One calls for comprehensive tort reform measures, including a cap on noneconomic damages, caps on attorneys' fees, and equal access to physician experts by the defense and the plaintiff in malpractice cases. Another asks the Legislature to carefully study tort law statutes in other states before making any changes to Minnesota's statutes.

Public Health

The MMA is continuing its long tradition of antitobacco activism with two resolutions aimed at fighting the menace of secondhand smoke. One seeks to ban smoking in all workplaces, "thus protecting all employees from exposure and effects of secondhand smoke." Another calls for making all health care facilities and grounds completely smoke-free by the year 2000.

One resolution that seems likely to generate media interest calls on the MMA to endorse food irradiation. State epidemiologist Michael Osterholm, Ph.D., a vocal advocate of irradiation, is slated to make a presentation on the subject to Reference Committee C. ■

VIEWPOINT

Paul C. Matson, M.D.

Chair, MMA Board of Trustees



MMA Prepares to Meet the New Millennium

As part of our strategic plan, the Minnesota Medical Association is seeking to get more members actively involved in the MMA and is helping physicians meet the challenges of the new millennium, including the year 2000 computer problems. For this year's MMA Annual Meeting we have added an extra inducement—an educational program on medical information in the new millennium. The program will take place on Wednesday, October 7, the first day of the meeting.

One of the most important topics on the program concerns the impact of the year 2000 on your medical practice. If you think Y2K won't affect you, this presentation may be an eye-opener. Kevin T. Lutz, the American Medical Association's resident computer expert, will explain how computer glitches can cause problems for physicians and their patients. Speaking at the AMA Annual Meeting in June, Lutz cited an alarming example: A 99-year-old man came into the emergency department with a highly abnormal white blood count, which the computer reported as normal because the readings were fine for an infant. The computer, reading

only the last two digits, assumed his birth date of 1889 was 1989. Fortunately, a doctor caught this unusual error.

Similar computer glitches may not be so unusual in the year 2000. Historically, many computer programs have indicated years with two digits instead of four. In Y2K, these programs may assume it is 1900.

Even if your computers are Y2K compliant, you may not be immune to the millennium bug. All devices that contain a computer chip and their operating programs could be affected. This includes a wide variety of equipment, such as fetal heart monitors, surgical lasers, and pacemakers. Billing and coding, accounts receivable, collections, and other business functions are also vulnerable. When Michael Hash, deputy director of the Health Care Financing Administration, was in Minneapolis, he urged physicians to test and validate their Y2K compliance and warned that if we don't submit bills that HCFA can process, there will be problems with Medicare and Medicaid reimbursement.

Glitches may occur even earlier than the year 2000. Practices that schedule follow-up care several years ahead may start encountering problems very soon. To add to the confusion, some computer programs use the characters "99" to identify the

end of a data file or to indicate that a document was not dated. Noncompliant systems will store dates in 1999 as "99," possibly activating incorrect processing. As if this weren't enough, the year 2000 is the first century leap year since 1600, which could create additional programming problems.

The potential impact of Y2K puts this topic first on the MMA afternoon agenda. In addition, Lutz will be the keynote speaker at a three-hour presentation on coping with Y2K problems presented by the Minnesota Medical Group Management Association along with the Hennepin Medical Society and Ramsey Medical Society in association with the Minnesota Medical Association. This program is scheduled from 9 a.m. to noon on October 7.

Other topics in the MMA educational program are: the Internet and the medical journal club of the future; the Internet as a diagnostic and treatment tool and patient educator; computer-based continuing medical education; and electronic physician credentialing and profiling. Following the educational program, MMA members are invited to a reception, followed by a presentation on medical marriages sponsored by the MMA and the MMA Alliance.

I hope you will accept our invitation to attend this informative program. ■

Y2K Problems Subject of MMA Annual Meeting Seminar

Find out how the year 2000 problem could affect your medical practice at an educational program, "Medical Information in the New Millennium," which kicks off this year's MMA Annual Meeting on October 7. The American Medical Association's Y2K expert Kevin T. Lutz will explain the nature and extent of the year 2000 problem and suggest how you can prepare to avoid serious disruption to your practice. Other topics of the seminar include: the Internet as a diagnostic and treatment tool, computerized medical records, and electronic physician credentialing and profiling. The program will be held from 12:30 to 5:30 p.m. at the Radisson Hotel in St. Paul. A complimentary box lunch will be provided. After the program,

MMA members are invited to a reception, followed by a presentation on medical marriages sponsored by the MMA and the MMA Alliance. Nationally renowned author William J. Doherty, Ph.D., will speak. There is no charge to MMA members, but space is limited, so reserve your place now. Call Vicki Westling at 612/378-1875 or 800/DIAL-MMA.

The AMA's Lutz also will speak at a Y2K program from 9 a.m. to noon on October 7 at the St. Paul Radisson Hotel (see Viewpoint on facing page). For more information, call Kathy Dittmer at Hennepin Medical Society, 612/623-2885, or Jennifer Toso at Ramsey Medical Society, 612/362-3704. ■

MCSM Sells Credentialing Service

The limited liability partnership formed in 1997 between Hennepin and Ramsey medical societies' credentialing programs, Medical Credentialing Services of Minnesota, LLP, is selling the assets it uses in providing credentialing services. Digital Medical Registrar, Inc., based in California, has purchased the program, and will begin providing credentialing services to hospitals, health plans, nursing homes, and provider networks previously served by MCSM starting in early autumn.

DMR, which manages credentials for about 20,000 practitioners in a dozen states, will be able to send physician files to new hospitals or insurance companies immediately following physician authorization due to the fact that it can re-verify physicians' credentials on a quarterly basis. Using DMR as its agent, MCSM will continue to provide certain "supplemental" services relat-

ing to the exchange of materials in disciplinary actions; MCSM will continue to uphold peer review confidentiality and to guard the interests of physicians through membership on the DMR board.

Uniform Credentialing Task Force Moving Ahead

DMR's purchase of the credentialing programs will not affect the work of the MMA Uniform Credentialing Task Force, chaired by Benjamin H. Whitten, M.D., which has been studying the feasibility of establishing a joint purchasing coalition for primary physician credentialing verification services. The task force formed in response to a resolution passed by the 1997 House of Delegates.

The Minnesota Medical Association Board of Trustees at its August

Officer Elections Will Take Place at Annual Meeting

The 1998 MMA Annual Meeting is fast approaching. This year's gathering—which will include the inauguration of the MMA's second-ever woman president, Judith F. Shank, M.D.—is slated for October 7-9 at the Radisson Hotel in St. Paul. The slate of 1998-99 officer nominees is as follows:

President-elect:

John M. Van Etta, M.D.

Vice President:

Rebecca J. Hafner, M.D.

Secretary:

Robert G. Milligan, M.D.

Treasurer:

Noel R. Peterson, M.D.

Speaker of the House:

Blanton Bessinger, M.D.

Vice Speaker of the House:

Gary D. Hanovich, M.D.

AMA Delegates:

Robert D. Christensen, M.D.

Frank J. Indihar, M.D.

Carolyn J. McKay, M.D.

Audrey M. Nelson, M.D.

AMA Alternate Delegates:

Raymond G. Christensen, M.D.

Kenneth W. Crabb, M.D.

Anthony C. Jaspers, M.D.

John M. Van Etta, M.D.

All of this year's AMA delegate and alternate delegate nominees are current delegation members who are eligible for reelection.

Nominations will remain open through the first session of the House of Delegates. ■

DMR cont. on page 40

1998 Resolution Summary

The 1998 MMA House of Delegates will convene at the Radisson Hotel in St. Paul on October 8 and 9 to take action on resolutions that will set the MMA's course for the coming year. As *News & Views* goes to press, the following draft resolutions have been submitted:

Dioxins

Introduced by the MMA Subcommittee on Environmental Health and Occupational Medicine and the MMA Committee on Public Health and Preventive Medicine

Resolves that the Minnesota Medical Association acknowledge the role that polyvinyl chloride (PVC) plays in the production of dioxins, acknowledge the environmental and physical threats associated with dioxins, acknowledge the need to reduce the use of PVC products, and support efforts to address dioxin as a pollutant through strategies including, but not limited to, material substitution of PVC products.

Food Irradiation

Introduced by the MMA Subcommittee on Environmental Health and Occupational Medicine and the MMA Committee on Public Health and Preventive Medicine

Resolves that the MMA 1) endorse food irradiation as a safe and effective process that increases the safety of food when applied according to governing regulations; 2) [assert] that the value of food irradiation is diminished unless it is incorporated into a comprehensive food safety program based on good manufacturing practices and proper food handling, processing, storage, and preparation techniques; 3) encourage the AMA to continue to work with the FDA and the U.S. Department of Agriculture to continue the requirement that all irradiated fruits, vegetables, meats, and seafood carry the international logo that has become recognized as indicating that the food has been subjected to gamma irradiation; and 4) endorse the principle that the demonstration of safety for food irradiation requires evidence of a reasonable certainty that no harm will result but does not require proof beyond

any possible doubt (i.e., "zero" risk does not exist).

Mandated Content of CME

Introduced by the Minnesota Radiological Society

Resolves that the MMA ask the Minnesota Legislature to avoid mandating specific topics or diseases for continuing medical education (CME), and further resolves that the MMA ask the Legislature to drop the requirement for mandated CME in infection control.

Amendments to MMA Bylaws

Introduced by the MMA Board of Trustees

Resolves that the MMA adopt several proposed amendments to the MMA Bylaws.

Proposed Medical Malpractice Legislation

Introduced by the Legislation Committee of Zumbro Valley Medical Society

Resolves that the MMA request that before making any changes in the statutes governing tort law, the Minnesota Legislature study all aspects of the process, including review of the procedures in nearby states and a critique of the California statutes.

Education Regarding New Advance Directives Mechanisms

Introduced by the Medicine, Religion and Bioethics Committee of ZVMS

Resolves that the MMA encourage local medical societies to provide information to their members regarding the amended advance health care directives law, and further resolves that the MMA work with other professional and state health agencies, including the Minnesota Department of Health, to develop strategies utilizing local organizations (e.g., senior centers and religious organizations) to disseminate information regarding the purpose and use of advance health care directives.

Simplification of MERC Claim Forms

Introduced by the Legislation Committee of ZVMS

Resolves that the MMA request the Medical Education Research Costs (MERC) program to simplify the training grants request forms to allow smaller providers to participate comfortably in the MERC program, providing financial support to individuals training health care providers.

Research Tax Credit

Introduced by the Legislation Committee of ZVMS

Resolves that the MMA support an increase in funding for qualifying research expenditures, and further resolves that the MMA recommend that an increase in funding for qualifying research expenditures be accomplished by allowing a direct deduction from the MinnesotaCare provider tax for the entire amount of such expenditures.

Promotion of Improved Pain Management for End of Life

Introduced by the Medicine, Religion and Bioethics Committee of ZVMS

Resolves that the MMA encourage local medical societies to make information available to their members about the law regarding treatment of intractable pain, and further resolves that the MMA encourage local medical societies to identify pain-management resources designed a) to encourage individual practitioners' efforts to manage end-of-life pain adequately, and b) to improve patients' access to effective methods of end-of-life pain management.

Varicella Vaccinations

Introduced by Range Medical Society

Resolves that the MMA support mandatory varicella vaccinations for children, where appropriate, prior to entry to school or daycare centers.

Water Safety

Introduced by Range Medical Society

Resolves that the MMA lobby the Minnesota Legislature for the mandatory use of flotation devices by children when involved in boating on navigable waters in the state of Minnesota.

Protective Headgear

Introduced by Range Medical Society

Resolves that the MMA lobby the state Legislature for the mandatory use of headgear by children while engaged in the following sports: rollerblading, downhill skiing in licensed ski areas, riding off-road vehicles, such as four wheelers and motorcycles, and riding bicycles in the state of Minnesota.

Seat Belt Safety

Introduced by Range Medical Society

Resolves that the MMA continue to aggressively lobby the Minnesota Legislature to make the failure to use seat belts while driving a primary offense with a fine of \$100 for the first offense and \$300 for the second offense.

Provider-Driven Care Systems

Introduced by Ramsey Medical Society (RMS)

Resolves that the MMA investigate current Minnesota statutes to identify statutory barriers to the formation of provider-driven care systems, and further resolves that the MMA introduce and support legislation to eliminate any identified barriers to the formation of provider-driven care systems.

Gifts to Physicians

Introduced by RMS

Resolves that the MMA investigate the statutory restrictions on physicians' acceptance of gifts from pharmaceutical manufacturers and wholesale drug distributors and, taking into consideration the ethical guidelines in place, develop a recommendation to the MMA Board of Trustees on revising Minnesota Statute § 151.461.

Centralized Medical Database

Introduced by RMS and HMS

Resolves that the MMA open discussions with hospitals, health plans, and other interested private parties to establish a centralized medical database; and further resolves that the MMA establish a policy that the centralized database be privately held until the measures used can be demonstrated to be valid and reproducible; and further resolves that MMA establish a policy that the participating parties receive only their own data to be compared to the aggregate and unidentifiable benchmark data/information.

Replacing Provider Tax with Tobacco Settlement Funds

Introduced by RMS

Resolves that the MMA introduce and support legislation to repeal the provider tax and replace that revenue with tobacco settlement revenue, and further resolves that MMA introduce and support legislation to expand MinnesotaCare for uninsured people and to fund the expanded coverage of MinnesotaCare with tobacco settlement funds.

Preparing for Y2K

Introduced by RMS

Resolves that the MMA distribute or cause to be distributed to all MMA members the Year 2000 operational plans of each payer and also inform MMA members of any payer that has no Y2K operational plan.

Health Care for Adolescent and Young Adult Males

Introduced by RMS

Resolves that the MMA develop a public information campaign to inform adolescent and young males and the public about health problems common to this population group and to encourage adolescent and young males to seek appropriate medical services. Further resolves that the MMA delegation to the AMA House of Delegates develop a resolution calling on the AMA to research the need for a national initiative devoted to the health care needs of adolescent and young males.

Delayed Payments

Introduced by RMS

Resolves that the MMA use the survey developed by the AMA to survey physician members to determine whether or not health plans and managed care organizations are making timely payments to physicians as required by Minnesota state law. Further resolves that should the MMA Board of Trustees determine that delayed payments are a problem for physicians, the MMA will draft and support legislation in Minnesota based on AMA Policy H-190.981, which calls for all insurance entities to pay "clean claims" filed electronically within 14 days and paper claims within 30 days, with interest accruing thereafter.

Support for EMSC Program

Introduced by RMS and HMS

Resolves that the MMA endorse and support the mission and work of the Emergency Medical Services for Children Resource Center of Minnesota, and further resolves that the MMA support appropriation of funds for EMSC by the Minnesota Legislature.

Medical Malpractice Legislation

Introduced by RMS

Resolves that the MMA develop a tort reform bill that would cap non-economic damages at \$250,000, include a sliding-scale cap on attorney contingent fees, allow periodic payments for large awards, include favorable changes to joint and several liability provisions, and provide equal access by the defense and the plaintiff to physician experts. Further resolves that if needed, the MMA introduce and aggressively support the tort reform bill to counteract tort reform legislation determined to be unfavorable to physicians.

Use of Tobacco Settlement Revenue

Introduced by RMS

Resolves that the MMA develop as a high priority a position paper on the appropriation by the Minnesota Legislature of the revenue received from the lawsuit against the tobacco industry. Further resolves that the MMA include in the position paper a resource list of proven programs to prevent children from becoming addicted to tobacco products.

Defining Utilization Review as the Practice of Medicine

Introduced by RMS

Resolves that the MMA introduce and support as a high priority legislation that defines utilization review as the practice of medicine subject to the regulations of the Minnesota Board of Medical Practice.

Membership by Choice

Introduced by RMS

Resolves that the MMA appoint a task force consisting of representatives of component medical societies and the MMA, appointed by the Speaker of the MMA House of Delegates, to study options for membership in Minnesota



and make a report available to all members of the MMA.

Using the Term 'Physician'

Introduced by RMS

Resolves that the MMA pursue federal legislation that precisely clarifies that the term "physician" refers only to those with the M.D. or D.O. degree, and the term "physician services" refers only to services provided by a licensed M.D. or D.O. Further resolves that the MMA delegation to the AMA House of Delegates call on the AMA to pursue federal legislation in Congress changing the present Medicare definition of "physician" to include only licensed M.D.s and licensed D.O.s and "physician services" to include only services provided by M.D.s and D.O.s.

Agreement on Payment for Services

Introduced by RMS

Resolves that the MMA pursue legislation requiring all third-party payers to guarantee payment for services by preauthorization when called upon, and further resolves that once preauthorized, no subsequent withdrawal of payment can be claimed against the physician unless fraud was committed, or incorrect information was provided at the time prior approval was obtained.

Medicare User Fees

Introduced by RMS

Resolves that the MMA oppose the imposition of Medicare user fees on physicians and lobby against Medicare user fees to the Minnesota Congressional delegation.

Ban on Smoking in All Workplaces

Introduced by RMS, Lake Superior Medical Society, and the MMA Committee on Communications

Resolves that the MMA initiate or support state legislation to prohibit smoking in any workplace, thus protecting all employees from exposure and effects of secondhand smoke. Further resolves that the MMA delegation to the AMA call upon the AMA to support the adoption of state legislation and Occupational Safety & Health Administration (OSHA) standards to provide strict workplace protection from second-hand smoke.

Nursing Facility Services

Introduced by the RMS Committee on Communications

Resolves that the MMA convene a task force that includes representatives of the Minnesota Health and Housing Association, Care Providers of Minnesota, and the Minnesota Department of Health to study the issue of state nursing facility surveyors' authority to contravene physicians' orders, and to make recommendations to the appropriate entities.

'No-Check' Hockey

Introduced by RMS and HMS

Resolves that the MMA work with the Minnesota Amateur Hockey Association, the Minnesota State High School League, and others to explore no-check hockey for all levels of youth and adolescent ice hockey leagues, or at a minimum to encourage the "fair-play" concept, which incorporates sportsmanship in the team scoring. Further resolves that the MMA develop a public awareness and education campaign designed to inform parents, youth, coaches, and the public about the risks of injury associated with checking and other aggressive behaviors in ice hockey and encourage the removal of all violence from youth sports.

Preparticipation Athletic Exams

Introduced by RMS

Resolves that the MMA introduce and support legislation defining preparticipation athletic physical examinations as the practice of medicine to be performed only by an M.D. or a D.O. and recommending that the physical examination conform to published, acceptable standards.

Support for the MetroEast Coalition for the Working Poor

Introduced by RMS

Resolves that the MMA support the efforts of the MetroEast Coalition for the Working Poor to obtain funding from public sources, including, but not limited to, the tobacco settlement funds.

Fair Coverage for Contraceptives

Introduced by Anne Towey, M.D., Delegate, HMS

Resolves that the MMA support the right of patients to obtain fair coverage for contraceptive medications and

devices as they would for other prescription medications.

Protection of Children from Gun Violence

Introduced by Anne Towey, M.D., Delegate, HMS

Resolves that the MMA support as a principle the protection of our children from gun violence.

Sexual Discrimination and Harassment in the Medical Workplace

Introduced by the MMA Committee on Women Physicians

Resolves that the MMA endorse further research on the prevalence and causes of this type of abuse in the medical workplace and work toward elimination of sexual discrimination and harassment in the medical workplace.

Access to Guns by Children

Introduced by HMS

Resolves that the MMA undertake an advocacy role to remove children's unsupervised access to guns in Minnesota.

Adjustment for MinnesotaCare Tax Form

Introduced by HMS

Resolves that the MMA propose that the Minnesota Department of Revenue revise the MinnesotaCare Annual Tax Return Form to reflect the tax included in payments from payers with a separate line for "adjustment for tax payments included" at the rate of .02 for 1997 forms and .015 for 1998 forms.

Insurance Parity for Mental Health and Psychiatry

Introduced by Minnesota Psychiatric Society

Resolves that the MMA support the national parity and state parity rules to increase the minimum standard health care coverage for mental health and psychiatry to a higher and more appropriate level.

Continuity of Care/Any Willing Medical Doctor

Introduced by HMS

Resolves that the MMA support legislation that ensures that patients have access to the physician (defined to mean licensed pursuant to Minnesota Statutes Chapter 147) of their choice, provided the physician is willing to

accept the payment and terms of the patient's health plan.

Employer Disclosure of Health Care Benefit Costs

Introduced by HMS

Resolves that the MMA urge Minnesota employers to disclose and itemize the full costs of health care, including employer contributions, on all payroll checks, to all Minnesota employees.

Guidelines for Adolescent Preventive Services

Introduced by HMS

Resolves that the MMA endorse Guidelines for Adolescent Preventive Services (GAPS) as an appropriate standard of care. Further resolves that the MMA encourage health plans to fully fund GAPS, and that the MMA educate physicians about the importance of GAPS and related funding issues.

Domestic Violence in the Presence of a Child

Introduced by HMS

Resolves that the MMA pursue enactment of legislation that increases the level of criminal offense for domestic violence from a misdemeanor to a felony when perpetrated in the presence of a child.

Managed Care Liability for Treatment Outcomes

Introduced by HMS

Resolves that the MMA support legislation holding HMOs responsible for malpractice liability like that which applies to other treatment providers.

Mental Illness Awareness Week

Introduced by HMS and the Minnesota Psychiatric Society

Resolves that the MMA support the activities of Mental Illness Awareness Week (October 4-10, 1998), promoting awareness and educational efforts concerning mental disorders among the membership and their patients.

Minor Consent Law

Introduced by HMS

Resolves that the MMA support current law regarding parents' access to the medical records of their unemancipated minor children.

Physician Training in Violence Prevention

Introduced by HMS

Resolves that the MMA request that the AMA develop minimum standards for the training of physicians in medical schools and residency programs in violence prevention and intervention. Further resolves that the MMA request that all organizations seeking continuing medical education accreditation through the MMA, include in primary care forums training in family violence prevention and intervention.

Pre-participation Athletic and Camp Physical Exams

Introduced by HMS

Resolves that the MMA encourage a restructuring of the preparticipation athletic and camp physical exams to include prevention of and assessment and screening for high-risk behaviors.

Prompt Payment of Insurance Claims

Introduced by HMS

Resolves that the MMA introduce Minnesota legislation requiring health plans to pay undisputed claims within 30 days and disputed claims within 30 days of final determination, or be assessed a reasonable simple interest rate.

Provider Tax

Introduced by HMS

Resolves that the MMA strongly urge the Legislature, now that there are two possible sources of replacement funding (increased tobacco tax and payments from the tobacco companies), to repeal the provider tax completely.

Public Health Foundation to Address Tobacco Use

Introduced by HMS

Resolves that the MMA actively support the creation of a public health foundation to diminish the human and economic consequences of tobacco use. Further resolves that the MMA be appropriately represented on the board of the foundation.

Sight and Hearing Protection

Introduced by HMS

Resolves that the MMA work with the Sight and Hearing Association and other agencies as appropriate to explore initiatives, such as public aware-

ness and education, to reduce the incidence of injury and loss of sight and hearing in all populations.

Smoke-Free Health Care Facilities/Grounds

Introduced by the Minnesota Physician-Patient Alliance, HMS, and LSMS

Resolves that the MMA help create and promote a statewide hospital/clinic set of rules/laws that would make health care facilities/grounds smoke-free by the year 2000, and further resolves that the MMA appeal to foundations to help fund this process.

Tobacco Settlement Dollars

Introduced by HMS

Resolves that the MMA pursue legislation allocating a percentage of the settlement payment to trusts for funding public health education, undergraduate and graduate medical education, Minnesota provider tax replacement, MinnesotaCare, and Medicaid in future years.

Utilization Review Reform

Introduced by HMS

Resolves that the MMA support legislation to modify the Utilization Review Act of 1992 to ensure that final decisions to deny payment of claims based on determinations of medical necessity are reviewed by physicians licensed in the state of Minnesota and currently practicing in the same specialty as the physician providing care.

Workplace Violence and Abuse Prevention

Introduced by HMS

Resolves that the MMA encourage all hospitals and clinics to adopt policies to reduce and prevent workplace violence and abuse and develop policies to manage reported occurrences. Further resolves that the MMA encourage local medical societies and other professional associations to adopt a policy to reduce and prevent workplace violence and abuse.

Education Center at the University of Minnesota Medical School

Introduced by HMS

Resolves that the MMA endorse its support of the planning and construction of a new Education Center at the



University of Minnesota Medical School.

Regulation and Oversight of HMO Expenditures in Minnesota

Introduced by HMS

Resolves that the MMA sponsor legislation to regulate HMO insurance and financial matters through the Minnesota Department of Commerce rather than the Department of Health.

COBRA/EMTALA Laws

Introduced by Upper Mississippi Medical Society

Resolves that the MMA, in concert with the AMA and other appropriate organizations, review the COBRA/EMTALA laws and support legislation to provide relief from the current onerous aspects of these laws as they are applied and enforced.

Resources for Alternative/Complementary Medicine Guidelines

Introduced by Stearns-Benton Medical Society

Resolves that the MMA continue to help physicians identify available resources, including those reported in the medical and scientific literature, that describe alternative and complementary therapies and their utilization.

MMA Dues and 1998 MMA Budget

Introduced by the MMA Board of Trustees

Resolves that MMA member dues be maintained at the same level for 1999 as they were in 1998, and further resolves that the proposed 1999 MMA Operations Budget and the proposed 1999 MMA Capital Budget be approved.

MMA Endorsement of "Patients' Bill of Rights" Legislation

Introduced by RMS

Resolves that the MMA endorse H.R. 3605 and S. 1890, "Patients' Bill of Rights," and actively lobby the Minnesota Congressional delegation for their passage.

MMA Support of CME and Accreditation Programs

Introduced by the MMA Committee on Accreditation and Continuing Medical Education

Resolves that the MMA recognize

that increased fees to accredited sponsors may have a deleterious, downward spiral effect on the overall CME and accreditation programs of the MMA. Further resolves that the MMA rescind its position on budget neutrality for the continuing medical education and accreditation programs and invest financially in these programs to assist in meeting the goals of the overall mission of the MMA and in maintaining high quality continuing education programs throughout Minnesota.

Abortion Data Reporting

Introduced by the MMA Committee on Public Health and Preventive Medicine

Resolves that the MMA employ any and all means to either prevent the implementation of or repeal the new abortion reporting requirements.

Minority Affairs Student Mentoring Program

Introduced by the MMA Committee on Minority Affairs

Resolves that the MMA initiate a two-year student mentoring pilot program aimed at increasing the number of minority physicians and health care providers in Minnesota.

DMR cont. from page 35

8 meeting authorized funding for initial legal fees to explore, with the Minnesota Hospital and Healthcare Partnership and the Minnesota Council of Health Plans, the joint purchasing pool concept.

"The joint purchasing coalition will evaluate proposals from specific vendors based upon performance criteria," Whitten said. "These criteria will include the ability to provide contract services in a timely and efficient manner, cost and confidentiality considerations, and accountability to physicians and other health care professionals. The members of the joint purchasing coalition will exercise a fiduciary and professional responsibility to the coalition and its constituents when making decisions about purchasing services."

Pat Hanson, MMA manager of quality and data, who staffs the task force, said DMR "would certainly be one of the companies that could submit a proposal, if they meet all the criteria that the group sets up," when and if a joint purchasing coalition plan is finalized. ■

Third Annual Stop the Violence Day at the Dome September 27, 1998

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Discount tickets are available: lower deck reserved seats are \$9 (regularly \$13); lower deck general admission seats are \$6 (regularly \$8). The Twins will donate \$1 for each ticket sold to Fairview-University Children's Hospital to help at-risk kids and kids who suffer from abuse. For more information, call Stacy Bjorklund at 612/375-7482.

NEWS DIGEST

People and places
making medical news



People & Places

Jeffrey Kahn, Ph.D., M.P.H., director of the University of Minnesota's Center for Bioethics, has been named contributing health columnist for CNN.com/HEALTH, part of CNN Interactive. Kahn will contribute bi-monthly articles on ethical matters relevant to current health issues, including topics such as human egg donation and insurance payments for Viagra. CNN.com/HEALTH covers health, diet, and medical trends. (Watch for his editorial on human egg donation in next month's *Minnesota Medicine*.)

Carolyn McKay, M.D., M.P.H., a pediatrician with more than 30 years of experience and one of the MMA's delegates to the AMA, recently joined Fairview Eagan Clinic and Staub Pediatric Clinic in Minneapolis.

Bemidji pediatrician Edna Perez-Koury, M.D., received a Community Access To Child Health (CATCH) grant, awarded by the American Academy of Pediatrics and funded by Wyeth-Ayerst Laboratories. She used the grant to establish the Family Health Clinic, which provides nonemergency and preventive health care to families in the Bemidji area. Perez-Koury is the only pediatrician in Minnesota to receive a CATCH grant.

Blue Cross Blue Shield of Minnesota has appointed William Gold, M.D., as chief medical officer and

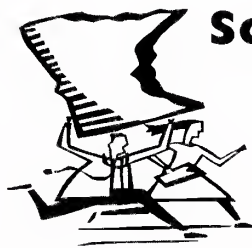
Timothy Peterson as chief financial officer. Gold, vice president and medical director at BCBSM, will be responsible for medical management, partnership activities, strategic innovation, and community health. Peterson, a partner in the Minneapolis division of Ernst & Young LLP, will be responsible for financial functions and strategies.

The physician staff of Regions Hospital recently selected new leaders of the medical staff and divisions. They are: John Weigelt, M.D., chief of staff; Robert Olson, M.D., chief of staff-elect; Michael Spilane, M.D., primary care division; Lynn Solem, M.D., surgery division; Daniel Hanson, M.D., behavioral health division; and Gary Schwochau, M.D., medical specialties division.

John Lake, M.D., a professor of medicine and surgery, has been ap-

pointed director of the Liver Transplant Program and head of the division of gastroenterology at the University of Minnesota's Department of Medicine, Dermatology and Neurology. Lake, a medical school alumnus, was recruited from the University of California-San Francisco.

Three Minnesota hospitals—Mayo Clinic in Rochester, Fairview-University Medical Center in Minneapolis, and Hennepin County Medical Center in Minneapolis—made the list of "America's Best Hospitals" in the July 27 issue of *U.S. News & World Report*. The report ranks 100 top hospitals among 1,985 tertiary care facilities, evaluated by criteria including reputation among specialists, death rates, and other medical data. Mayo Clinic was ranked No. 1 for endocrinology, gastroenterology, neurology, orthopedics, and rheumatology. ■



Socioeconomics

Minnesota Seniors Pay More for Medicare Plans

Seniors in the Twin Cities are paying considerably higher premiums and

getting fewer benefits than Medicare HMO members in other cities, according to a report by *Consumer Reports* magazine. The survey of more than 200 Medicare HMOs and more than 1,200 Medicare supplemental insurance policies in 19 cities revealed that Medicare HMOs in cities such as New York, Los



Angeles, and Miami offer more benefits at a lower price.

In the Twin Cities, a basic Medicare HMO package costs about \$800 a year. In all the other markets surveyed, the basic package costs nothing and often includes many extras, such as prescription drug or eyewear coverage, for free. The disparity, which also affects rural counties across the United States, results from the federal government's Medicare reimbursement formula, which is based on regional costs of providing health care services. Last year's Balanced Budget Act was supposed to help narrow the gap between reimbursement rates, but the change is so incremental that Minnesota seniors may not notice it, said Michael Scandrett, executive director of the Minnesota Council of Health Plans, in a *Saint Paul Pioneer Press* article.

The *Consumer Reports* study did not look at quality of care in Medicare HMOs, but a second phase of the survey involving quality will be released in October.

United, Humana Cancel Planned Merger

United HealthCare and Humana announced their mutual agreement to terminate a merger that would have created the nation's largest managed care company. The decision came on August 10, four days after United posted a \$900 million second-quarter loss. The value of United HealthCare's stock dropped nearly 30 percent the day the loss was announced, and the terms of United's proposed acquisition of Humana were thrown into question.

United HealthCare attributed its huge loss to the costs of expanding Medicare health plan business; eliminating some business units, product lines, and contracts; consolidating processing activities; and expected work-force reductions.

To control costs, the health plan says it will improve its assessment

and medical management of Medicare patients, especially for those with cardiac problems, and will contract with outside vendors to reduce the costs of cataract procedures.

HCMC Buys Into Life Link III

Hennepin County Medical Center has purchased a one-fifth interest in Life Link III, the nonprofit intensive-care transport service based in St. Paul. It is an equal owner with Allina Health System, Children's Hospitals and Clinics, Fairview Health System, and HealthPartners' Regions Hospital. HCMC has ended its contract relationship with a competing helicopter service operated by North Memorial Medical Center in Robbinsdale.

HealthEast Plans to Sell Healing Center to Infinite Health

HealthEast, the eastern Twin Cities metro area's largest health care network, has agreed to sell its Maplewood-based Healing Center to Infinite Health, Inc., the only member-based organization in Minnesota dedicated solely to alternative therapies. The Healing Center, which opened in the spring of 1997, provides naturopathy, acupuncture, psychology, massage therapy, and herbal therapy. As *Minnesota Medicine* went to press, the transition was expected to be complete by September 1. HealthEast plans to maintain a relationship with the center through joint research initiatives and other activities. ■

Rates, Trends & Data



Health Levels Reflect Income Disparities

A government report shows that while many Americans are living longer, healthier lives, people in lower socioeconomic groups lag far behind. Money and education are powerful factors shaping Americans' health, say the authors of the report, "Health, United States, 1998." They found a stair-step pattern from rich to poor that is seen in virtually every health risk factor, disease, and cause of death. On average, blacks and Hispanics often have poorer health than whites, largely because the poverty rate for blacks and Hispanics is three times that of whites.

Still, the overall tone of the report was encouraging, with life expectancy at a record high of 76.1

years, infant mortality at a record low, and falling death rates from heart disease, cancer, and firearms. "Health is improving in America along many fronts, and our challenge is to share that progress as widely as possible," said Health and Human Services Secretary Donna Shalala.

The report also shows that the gender gap in life expectancy has narrowed to six years, largely because of women's climbing death rates from heart disease and cancer, attributed to smoking. The life expectancy for men was 73.1 in 1996 and 79.1 for women. The longevity difference between whites and blacks has shrunk to 6.6 years, the smallest gap in a decade, reflecting declines in death rates among blacks from heart disease, homicide, and AIDS.

Teen Homicide Rates Decline

The homicide rate for teenagers and young adults has begun to decrease



for black and white Americans in urban and non-urban areas and for both sexes, according to the National Center for Health Statistics. Researchers at the center found that between 1993 and 1995, the firearm homicide rates declined annually, ranging from 4.4 percent in fringe metropolitan counties to 15.3 percent in medium-sized metropolitan counties. The study, published in the August 5 *Journal of the American Medical Association*, shows a significant decline in homicide rates for 15- to 24-year-old black males, a group for which homicide continues to be the No. 1 cause of death.

From 1987 through 1991, homicide rates among persons 15 through 24 years old had been the highest and had increased most rapidly. The teenage homicide rate nearly doubled in the United States between 1985 and 1993. ■



Research & Innovations

Stroke Victims Need to Get to the Hospital Faster

Stroke victims do not get to the hospital quickly enough for effective treatment, according to a University of Minnesota study published in the August *Annals of Internal Medicine*. "Our goal is to get [stroke sufferers] to recognize symptoms and get to the hospital," said Maureen Smith, M.D., M.P.H., a public health physician and co-author of the study.

The study, which examined med-

ical records of 1,900 stroke patients treated at Twin Cities metro area hospitals from 1991 to 1993, found that fewer than one in five stroke sufferers reaches a hospital within the first few hours of having a stroke. The newest drug therapies for strokes must be used within three hours to prevent or minimize brain damage or paralysis, Smith said.

MaryEllen Berman, a senior nurse and stroke researcher at the University of Minnesota, has led efforts to teach people about risks and symptoms of strokes. She and several volunteers have put together an educational video that is available to anyone for free. For information about stroke symptoms or to schedule an educational seminar, call the Northland Affiliate of the American Heart Association, 612/835-3300.

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Mayo Develops More Accurate Lyme Disease Test

Mayo Medical Laboratories and IMUGEN Inc. of Norwood, Massachusetts, have developed the newest and most accurate diagnostic assays available for detecting Lyme disease, announced the Mayo Clinic in early August.

The new assays are also the only reliable means of diagnosing Lyme disease in people vaccinated against the disease. The two groups are jointly offering the new tests through local hospitals and clinics, coinciding with the anticipated release of new Lyme disease vaccines.

David Persing, M.D., Ph.D., a Mayo Clinic molecular biologist, discovered and characterized the specific immune response components for the new tests, and investigators at IMUGEN developed the immunologic methods to utilize his discovery.



'U' Researchers Testing Genetic Mending Technique

University of Minnesota researchers are testing a genetic mending tech-

nique on dogs that has the potential to cure inherited diseases. Over the next year, Clifford Steer M.D., a professor of medicine, plans to test

the technique on about 12 dogs with an inherited form of hemophilia. If the trials are successful, the first human trials will probably involve hemophilia and familial hypercholesterolemia.

"This is not therapy; it is curing. These [genetic] changes are stable for life," said Steer, who discussed his work at a mammalian genetica meeting at the Jackson Laboratory in Bar Harbor, Maine, in late July.

Dr. Eric Kmiec of Thomas Jefferson University in Philadelphia invented the gene-mending technique about two years ago.

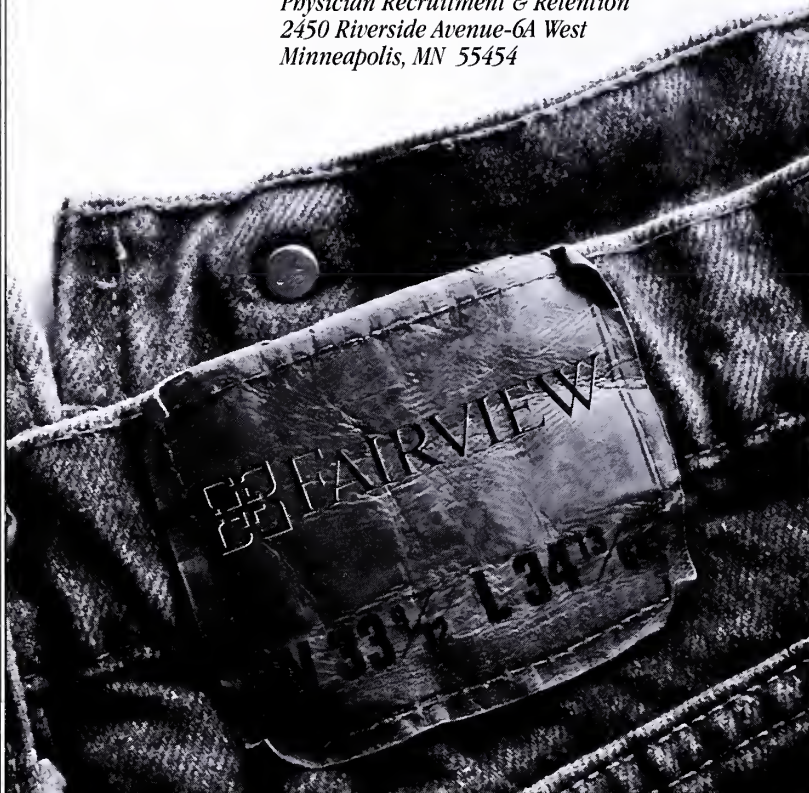
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Regions Doctor Creates Multi-Lingual Drug Labels

With the help of translators at Regions Hospital in St. Paul, Paul Gleich, M.D., has developed a computer system that prints drug labels in both English and in patients' native language—Cambodian, Hmong, Laotian, Russian, Spanish, or Vietnamese. Gleich, who leads the hospital's department of urology and is in charge of expanding the hospital's use of computers, plans to expand the system to print explanations of side effects and the purpose of each pill.

The labels enable patients to take their medications on time and in the proper dosages, said Patricia Walker, M.D., medical director for the hospital's Center for International Health. Some patients take from 15 to 30 pills a day, so it becomes confusing when they can't read the written instructions, she added. ■

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The Plague Years

By Jon Hallberg, M.D.

Images of biologic death—from anthrax to E. coli to mad cow disease—fill the news and entertainment media. Many of the metaphors used to describe contemporary disease stem from an ancient scourge: bubonic plague.

Lately, it seems that everywhere I turn I'm confronted by images of impending doom, both real and imagined. Among the most disturbing images are those of biologic death from any number of sources: mad cows, rotten produce, deadly *E. coli* strains, anthrax, *Salmonella*, meningitis. During this fin de siècle period, apocalyptic visions are bound to surface, but do these problems really pose a threat to humanity, or are they being exaggerated and exploited by the media? Certainly, bestselling books and popular films have done plenty to feed our paranoia—most of us are simultaneously fascinated and horrified by images of

mass biologic death. But many of the metaphors and images used to evoke contemporary disease have been with us for centuries. They can be traced back to one source: bubonic plague.

Plague. The Black Death. The words alone conjure up all kinds of images and phrases. We avoid things "like the plague." The figure of the Grim



ILLUSTRATION BY RUSS MCMULLIN

Reaper originated during the devastating plague in 14th-century Europe. Calls of "Bring out your dead!" rang out daily. Bodies were strewn about and piled up; some victims died in their tracks. Rats. Panic. These are the images in the back of our minds when we hear of the latest epidemic. How can something that occurred 600 years ago remain so vivid in our collective memory? The answer, I believe, is that these images are neatly, subtly woven into the fabric of our lives through religion, mythology, literature, and pop culture.

Several references to plague appear in the Bible. The word *plague* comes from the Latin *plaga*—to strike, often used when referring to God's punishment of a sinful people. In Exodus, God punishes the Pharaoh and his people with the Ten Plagues of Egypt (though only the fifth, anthrax, is truly a disease). The people of Ashdod are punished for stealing the Ark of the Covenant with a plague that caused painful "emerods" to appear on their skin. This word has been translated to mean everything from boils to tumors to hemorrhoids. A famous painting of this scene, from the 17th century, depicts the disease as the Black Death, though almost certainly it was not.

The Greeks, too, saw the plague as a heavenly punishment. Oedipus, having married his mother and killed his father, arrives in Thebes. The angry gods respond by throwing a plague upon the people of Thebes, forcing Oedipus to leave. Sophocles may have drawn inspiration for this opening scene of "Oedipus Rex" from a very real plague of the time, described in gory detail in the "History of the Peloponnesian War" by Thucydides. What this disease was continues to be debated. Some historians argue that it was bubonic plague, while others believe that it was toxic shock syndrome.

The first true pandemic of bubonic plague occurred during Emperor Justinian's reign, in approximately A.D. 540. Beginning in either Ethiopia or Egypt, the disease spread widely along trade routes, lasted nearly 60 years, and killed about 100 million people. Few images survive from that pandemic. Most of our visual representations of plague stem from the second pandemic, which lasted from 1347 to 1351, and from the plague of London in 1665.

Bubonic plague arrived in 1347 in the Black Sea port of Caffa from the Asian trade routes. Within four years, the disease had spread through Europe, killing 25 million people, one-fourth of the entire population. The pandemic had far-reaching social and political effects: the feudal system came to an end, the seeds for oceanic exploration were laid, the Catholic Church was questioned (paving the way for the Reformation), and scientific study of the human body began. *Life* magazine recently polled historians to rank the top 100 historical events of the millennium. Coming in at number 21 was the bubonic plague, cited for its profound history-altering impact.

The Florentine writer Giovanni Boccaccio lived through this plague and wrote "The Decameron," the

only surviving literary account of the medieval pandemic from the time.

Several films have drawn on imagery from the 14th-century plague. The 1926 German silent film, "Faust," directed by F.W. Murnau, shows a quaint medieval German town caught up in a moment of revelry. Quietly, ominously, the town is literally enveloped in the wings of Mephistopheles. Suddenly, swirling clouds of pestilence fill the town. Inhabitants flee in panic, but many die instantly. Ingmar Bergman, in his 1956 masterpiece "The Seventh Seal," used many images of the medieval plague, such as flagellants, the personification of death, and the burning of witches.

The 1989 experimental film "Book of Days" tells the story of a 14th-century Jewish girl whose town is devastated by the plague. Director Meredith Monk also makes overt references to the AIDS epidemic.

Some of the strongest images of plague come to us from London in 1665, the year of the "Great Visitation." Daniel Defoe (author of *Robinson Crusoe*) recreated the events of that time in his brilliant work, "Journal of the Plague Year," though he was only 5 when the pandemic struck and didn't write the book until 1724. "Journal of the Plague Year" reads like an epidemiologic investigation; Defoe carefully tallies statistics, describes trends, and records events.

Journalist Randy Shilts rivaled Defoe's description of a city beset by dread disease in his 1988 book "And the Band Played On," about the origins of the AIDS epidemic in the United States, particularly in San Francisco. More recently, Edward Rutherford writes about London during the time of the plague in his book "London," a *New York Times* bestseller that traces the history of the city from its Roman origins to the present.

The 1995 film "Restoration" attempted to portray the London plague, with limited success. Robert Downey Jr. plays a young physician who is drawn to help plague sufferers. The most visually interesting scene occurs when he dons his plague mask, which resembles an enormous bird's head.

The plague of London finally ended when the infamous, devastating fire killed the disease-carrying rats. In his comedy sketch, "The 2000 Year Old Man," Mel Brooks is asked by Carl Reiner what it was like during the time of plague. He responds: "Too many rats, not enough cats." The rat-filled fairy tale "The Pied Piper of Hamelin" is believed to have some plague connection.

Another cultural remnant from the London plague is one of the most common nursery rhymes:

Ring-a-ring o' roses,
A pocket full of posies,
A-tishoo! A-tishoo!
We all fall down.

The "ring o' roses" perhaps refers to a skin rash or changes; "posies" of herbs were carried as protection;

sneezing ("ah-choo!" in the U.S. version of the rhyme) may have been a symptom (though, in reality, it was more likely a cough); and "we all fall down," essentially tells what happened to victims. A parodist, writing in the January 9, 1949, *Observer* must have realized this deathly connection when he wrote:

Ring-a-ring-o'-geranium,
A pocket full of uranium,
Hiro, Shima,
All fall down!

The third plague pandemic began in 1894 in Hong Kong and, technically, continues to this day. It arrived in the United States for the first time in San Francisco in the late 1800s. The western United States remains the world's largest natural reservoir of plague. Recently, a woman from southwestern Colorado contracted the disease from her dying cat, who probably got it from a prairie dog, a natural carrier of the bacillus.

French author Albert Camus, winner of the Nobel Prize for Literature, wrote his masterpiece "The Plague" during World War II. The novel is set in Oran, Algeria, in the 1940s. From the protagonist stepping on a dead rat to the gradual crescendo of panic in the intense Algerian heat, the novel is a powerful account of the devastation

of plague. Camus said he wrote the book as an allegory for Nazi imperialism.

In 1950, "Panic in the Streets" hit the big screen. Shot in gritty black and white, this largely forgotten B movie starts out with the homicide of a newly arrived illegal alien on a wharf in New Orleans. When an autopsy reveals that the victim carried bubonic plague, police fear that his killer (a young Jack Palance) may spread the disease. Joining the police in their search for the killer is a young, idealistic Public Health Service doctor who convinces city officials of the gravity of the situation while trying not to create panic in the streets.

Tying together the past and present, the 1997 novel "The Plague Tales" by Ann Benson tells two parallel stories. One is that of a 14th-century plague doctor, the other that of a 21st-century archaeologist who unwittingly digs up a relic and unleashes plague on an unprepared world. I'm sure a screenplay is in the works. **MM**

Jon Hallberg is a family practice physician at Fairview Nicollet Mall Clinic in Minneapolis.

For more plague-related reading, see the book reviews of "Eleventh Plague: The Politics of Biological and Chemical Warfare" and "The Eleventh Plague: A Novel of Medical Terror," in the July 1998 Minnesota Medicine.

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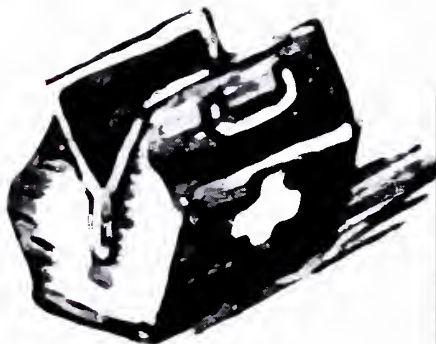
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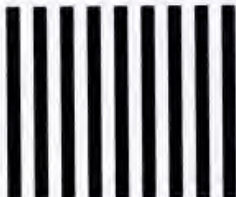
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Minnesota's New Health Care Directive

The Minnesota Legislature has replaced the living will and durable power of attorney laws with a more flexible advance directive law.

Barbara J. Blumer, J.D.

Minnesota advance directive law underwent a fundamental change on August 1, 1998, when the new "health care directive" replaced both the living will and durable power of attorney for health care laws. Many physicians and patients found living wills too limited because they are only effective when an individual becomes terminally ill; in addition, the living will format, prescribed in statute, is repetitive and overly focused on life-sustaining treatment. The Legislature hoped that the new law's increased flexibility would encourage more physicians and patients to take advantage of advance directives. This article highlights the major changes and discusses new opportunities and challenges.

EFFECT ON PRIOR ADVANCE DIRECTIVES

Living wills and durable powers of attorney for health care executed before August 1, 1998, remain valid if they comply with the law in effect on the date of execution *or* if they contain the six elements for a health care directive required under the new law (described in the following section). Thus, most prior advance directives are valid even if patients are unable or unwilling to update them.

HEALTH CARE DIRECTIVE

The new health care directive combines the essential elements of the living will and durable power of attorney for health care. The directive

includes two parts: the designation of a health care agent (power of attorney) and health care instructions. Patients do not need to complete both components of a health care directive but should be encouraged to do so.

Many health care providers consider the health care power of attorney the most important component of an advance directive. It determines substitute decision-makers with whom physicians can discuss care options and receive authorization for care delivery when the patient becomes unable to make or communicate decisions. This component is essentially the same as the prior durable power of attorney for health care.

Health care instructions are a written statement of the patient's values, preferences, guidelines, and directions regarding health care. The Legislature included no prescribed content for these instructions, so patients and physicians can address any subject of concern regarding their future health care. This component replaces the principal function of the living will.

The health care directive is not limited to times when the patient is terminally ill. A health care directive, including health care instructions, is effective *whenever* a patient is unable to make or communicate health care decisions.

The new health care directive law eliminates standard forms because they may not address every patient's concerns. Instead, the new law iden-

tifies six minimum requirements. A health care directive must:

- 1) be in writing;
- 2) be dated;
- 3) state the patient's name;
- 4) be executed by a patient with capacity to do so;
- 5) be verified by a notary or two witnesses; and
- 6) include either a health care instruction or a health care power of attorney, or both.

Although the new law includes a suggested form (see page 53), different regional, health system, affinity (e.g., the Hemlock Society), religious, language, literacy, legal, and educational groups will likely develop their own forms to meet their constituents' needs. This will permit health professionals and patients to prepare health care directives more tailored to their needs and, it is hoped, increase the use of advance directives.

This new way of defining a health care directive will also provide greater certainty in dealing with advance directives executed in other states. Forms used in other states or provided through national affinity groups are effective in Minnesota if:

- they are valid under the law of the state in which they were executed; or
- they include the six required elements of a health care directive in Minnesota.

FEATURES OF THE NEW LAW

The new health care directive includes several features of particular

interest to physicians and other health care providers.

APPOINTING JOINT AGENTS

A person can now appoint two or more health care agents to act jointly or individually and can specify dispute resolution provisions to address the possibility of deadlock. Prior law allowed a person to appoint only one agent, with alternate or successor agents. This new provision will not force people to choose among family members in appointing agents, but it will pose challenges if disputes arise. This provision of the law is modeled after the joint agency provision of financial powers of attorney.

DEFINING DECISION-MAKING CAPACITY

The law defines "decision-making capacity" as "the ability to understand the significant benefits, risks, and alternatives to proposed health care and to make and communicate a health care decision." Physicians and other health care providers can use this definition to determine if patients are able to make their own decisions or when the physician can appropriately look to a health care agent for authorization.

FORGOING DECISION-MAKING WHEN COMPETENT

A patient can now authorize the health care agent to make health care decisions even though the patient retains decision-making capacity. This provision permits a patient who is weary of making health care decisions to turn the decision-making over to a trusted family member or friend, while retaining the ability to give informed consent. This feature is not expected to be used often and is not part of the suggested form in the statute. Physicians and other health care providers should approach this situation thoughtfully, balancing their patients' right to choose their level of involvement in their health care decision-making with ethical and legal requirements regarding informed consent. Again, the financial power of attorney law has included this feature for a number of years, and the new health care directive adopts a similar standard.

CHOOSING WHERE A PATIENT LIVES

The definition of health care now encompasses the patient's abode and personal security safeguards when decisions on such matters relate to the patient's health care needs. This allows the health care agent to determine when the patient needs a nursing home, assisted living, or home care services. The new law clarifies that a health care agent, rather than a financial power of attorney, has the authority to make this kind of decision, although financial powers of attorney will be involved in the financial aspects of the situation.

CHOOSING A HEALTH CARE PROVIDER AS AGENT

Patients can now choose one of their health care providers as their health care agent. This was prohibited under prior law unless the health care provider or employee was a family member. The patient must specify the reason for choosing this person, such as longtime friendship. Health care providers should establish internal policies for handling such situations to prevent any real or apparent conflict of interest.

MAKING DECISIONS FOR PREGNANT WOMEN

The most controversial provision of the new health care directive is the "pregnancy presumption," added as a compromise in the waning hours of the legislative session. The presumption is complex and does not answer many questions about health care decisions for pregnant women who cannot express their own wishes. The presumption should, however, encourage health professionals to discuss the issue with women who are or could become pregnant. The presumption operates as follows:

- Health care providers should respect a pregnant woman's health care instructions (contained in a health care directive) about how her pregnancy should affect her health care if she loses decision-making capacity. This is in contrast to the prior living will law, which stated that health care providers should ignore pregnant women's living wills.

- When given clear and convincing evidence of a pregnant woman's

health care wishes from physicians, family, significant others, or friends, health care providers should adhere to these wishes.

- In the *absence* of either health care instructions or other clear and convincing evidence about a pregnant woman's wishes, the statute provides:

If a pregnant woman lacks decision-making capacity and there is a real possibility that, if health care to sustain her life and the life of the fetus is provided, the fetus could survive to the point of live birth, the health care provider should presume that the woman would have wanted such care to be provided. This applies even if withholding or withdrawing life-sustaining treatment would have been appropriate had the woman not been pregnant.

Questions unanswered by this provision include:

- Can the health care agent appointed by the pregnant woman make decisions about health care during her pregnancy that contradict the presumption if the woman didn't write health care instructions on the subject?

- How do health care professionals use this presumption when also considering the views and preferences of other people interested in either the woman or the fetus, or both? This could include the woman's husband or significant other, parents, or other close family members.

- What factors in addition to "live birth" are relevant to decisions on behalf of the fetus?

DETERMINING DECISION-MAKING CAPACITY

Another provision of the new health care directive law with limited but potentially controversial application is the "alternate gatekeeper" provision. Under most circumstances, the health care professional who needs informed consent for treatment determines when a patient lacks decision-making capacity. However, the new law permits a patient to appoint a third party to determine whether the patient has decision-making capacity under the following circumstances:

- When a patient adheres to Christian Science beliefs; or

• When a patient does not generally select a physician or health care facility to meet health care needs but the need to determine decision-making capacity arises when the patient is in a hospital or other health care facility. In this case, the decision will be made by the patients' attending physician after consultation with the third party.

PHYSICIANS ARE KEY TO SUCCESS

The new health care directive law was the work of a multidisciplinary working group sponsored by the Minnesota State Bar Association. Representatives of many health-related organizations, including the Minnesota Medical Association, helped assess problems with the previous advance directive tools. The working group concluded that the living will form likely stifled communication between physicians and their patients because it was too narrow in scope.

The working group hopes that the new law's flexibility will encour-

age more patients to write health care directives and more physicians to discuss health care planning with patients.

Physician commitment to health care directives is key to their widespread use. The new health care directive will provide a flexible framework for discussions between patients and physicians on a wide range of issues. The health care directive form included in the statute suggests (but does not require) that patients and health care providers talk about issues such as:

- beliefs and values about health care;
- goals and fears about health care;
- spiritual or religious beliefs and traditions;
- beliefs about when life would no longer be worth living;
- thoughts about how the patient's medical condition might affect the patient's family;
- thoughts about medical treatment in different situations, such as when the patient has a reasonable

chance of recovery, when the patient is dying, when the patient is permanently unconscious, when the patient is completely dependent on others, or when the patient needs pain control that would affect alertness or shorten life;

- the physician(s) that the patient would prefer to direct his or her health care;
- where the patient would prefer to live to receive health care;
- where the patient would like to live if dying, as well as other thoughts about how the dying process should go;
- organ donation issues.

UNRESOLVED ISSUES

The working group discussed a number of concepts loosely referred to as "enforcement provisions" but did not suggest any standards to the Legislature.

Many consumer and other groups representing patients are concerned that health care professionals do not always give advance directives the respect they deserve at appropriate

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times. The working group hotly debated the need for enforcement tools, such as professional licensure proceedings, forfeiture of professional fees, and civil money penalties for failure to respect advance directives. It also discussed the need to provide physicians and other health care professionals with incentives to discuss health care planning with patients, such as reimbursement for client counseling and treatment consultations.

In the end, the new law did not include any enforcement or incentive provisions. The working group intends to reconvene to continue discussing these matters and may propose additional legislation. In the interim, the working group hopes that the new law's flexibility will, in itself, provide an incentive to both patients and health care providers to discuss and create health care directives.

The working group also discussed health care providers' conscientious objections to requests made in patients' health care directives. The working group recognizes the need to clarify

state law on how and when health care providers can assert a conscientious objection to a patient's request, such as termination of treatment. Again, discussions will continue and may result in additional proposed legislation.

CONCLUSION

Health care systems will be taking a long look at the health care directive law and making suggestions to physicians and other health care providers about how to work within the new framework. In the meantime, the new law offers patients the opportunity to discuss with physicians their beliefs, values, fears, and expectations concerning their medical care.

MM

Barb Blumer is an attorney with the St. Paul law firm of Orbovich & Gartner Chartered. She represents health care providers who care for aging adults. She was a coordinator of the Minnesota State Bar Association Working Group that developed the new health care directive.

FAMILY PRACTICE - Franciscan Skemp Healthcare-Mayo Health System, based in La Crosse, WI, has over 160 physicians/associate providers at 12 clinics and three hospitals in WI, MN, IA.

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Sample Health Care Directive

I, _____, understand this document allows me to do one or both of the following:

PART I: Name another person (called the health care agent) to make health care decisions for me if I am unable to decide or speak for myself. My health care agent must make health care decisions for me based on the instructions I provide in this document (Part II), if any, the wishes I have made known to him/her, or must act in my best interest if I have not made my health care wishes known.

AND/OR

PART II: Give health care instructions to guide others making health care decisions for me. If I have named a health care agent, these instructions are to be used by the agent. These instructions may also be used by my health care providers, others assisting with my health care and my family, in the event I cannot make decisions for myself.

PART I: APPOINTMENT OF HEALTH CARE AGENT

This is who I want to make health care decisions for me if I am unable to decide or speak for myself. (I know I can change my agent or alternate agent at any time and I know I do not have to appoint an agent or an alternate agent.)

[NOTE: If you appoint an agent, you should discuss this health care directive with your agent and give your agent a copy. If you do not wish to appoint an agent, you may leave Part I blank and go to Part II.]

When I am unable to decide or speak for myself, I trust and appoint _____ to make health care decisions for me. This person is called my health care agent.

Relationship of my health care agent to me: _____

Telephone number of my health care agent: _____

Address of my health care agent: _____

(OPTIONAL) APPOINTMENT OF ALTERNATE HEALTH CARE AGENT: If my health care agent is not reasonably available, I trust and appoint _____ to be my health care agent instead.

Relationship of my alternate health care agent to me: _____

Telephone number of my alternate health care agent: _____

Address of my alternate health care agent: _____

This is what I want my health care agent to be able to do if I am unable to decide or speak for myself. (I know I can change these choices.)

My health care agent is automatically given the powers listed below in (A) through (D). My health care agent must follow my health care instructions in this document or any other instructions I have given to my agent. If I have not given health care instructions, then my agent must act in my best interest.

Whenever I am unable to decide or speak for myself, my health care agent has the power to:

(A) Make any health care decision for me. This includes the power to give, refuse, or withdraw consent to any care, treatment, service or procedures. This includes deciding whether to stop or not start health care that is keeping me or might keep me alive, and deciding about intrusive mental health treatment.

(B) Choose my health care providers.

(C) Choose where I live and receive care and support when those choices relate to my health care needs.

(D) Review my medical records and have the same rights that I would have to give my medical records to other people.

If I DO NOT want my health care agent to have a power listed above in (A) through (D) OR if I want to LIMIT any power in (A) through (D), I MUST say that here: _____

My health care agent is **NOT** automatically given the powers listed below in (1) and (2). If I **WANT** my agent to have any of the powers in (1) and (2), I must **INITIAL** the line in front of the power; then my agent **WILL HAVE** that power.

___ (1) To decide whether to donate my organs when I die.

___ (2) To decide what will happen with my body when I die (burial, cremation).

If I want to say anything more about my health care agent's powers or limits on the powers, I can say it here: ___

PART II: HEALTH CARE INSTRUCTIONS

[NOTE: Complete this Part II if you wish to give health care instructions. If you appointed an agent in Part I, completing this Part II is optional but would be very helpful to your agent. However, if you choose not to appoint an agent in Part I, you **MUST** complete some or all of this Part II if you wish to make a valid health care directive.]

These are instructions for my health care when I am unable to decide or speak for myself. These instructions must be followed (so long as they address my needs). These are my beliefs and values about my health care. (I know I can change these choices or leave any of them blank.)

I want you to know these things about me to help you make decisions about my health care:

My goals for my health care: _____

My fears about my health care: _____

My spiritual or religious beliefs and traditions: _____

My beliefs about when life would be no longer worth living: _____

My thoughts about how my medical condition might affect my family: _____

This is what I want and do not want for my health care. (I know I can change these choices or leave any of them blank.)

Many medical treatments may be used to try to improve my medical condition or to prolong my life. Examples include artificial breathing by a machine connected to a tube in the lungs, artificial feeding or fluids through tubes, attempts to start a stopped heart, surgeries, dialysis, antibiotics and blood transfusions. Most medical treatments can be tried for a while and then stopped if they do not help.

I have these views about my health care in these situations: (Note: You can discuss general feelings, specific treatments or leave any of them blank.)

If I had a reasonable chance of recovery and were temporarily unable to decide or speak for myself, I would want:

If I were dying and unable to decide or speak for myself, I would want: _____

If I were permanently unconscious and unable to decide or speak for myself, I would want: _____

If I were completely dependent on others for my care and unable to decide or speak for myself, I would want: _____

In all circumstances, my doctors will try to keep me comfortable and reduce my pain. This is how I feel about pain relief if it would affect my alertness or if it could shorten my life: _____

There are other things that I want or do not want for my health care, if possible:

Who I would like to be my doctor: _____

Where I would like to live to receive health care: _____

Where I would like to die and other wishes I have about dying: _____

My wishes about donating parts of my body when I die: _____

My wishes about what happens to my body when I die (cremation, burial): _____

Any other things: _____

PART III: MAKING THE DOCUMENT LEGAL

This document must be signed by me. It also must either be verified by a notary public (Option 1) OR witnessed by two witnesses (Option 2). It must be dated when it is verified or witnessed.

I am thinking clearly, I agree with everything that is written in this document and I have made this document willingly.

My signature: _____ Date signed: _____

Date of birth: _____

Address: _____

If I cannot sign my name, I can ask someone to sign this document for me.

(Signature of the person who I asked to sign this document for me.)

(Printed name of the person who I asked to sign this document for me.)

Option 1: Notary Public

In my presence on _____ (date), _____ (name) acknowledged his/her signature on this document or acknowledged that he/she authorized the person signing this document to sign on his/her behalf. I am not named as a health care agent or alternate health care agent in this document.

Signature of Notary: _____ (Notary Stamp)

Option 2: Two Witnesses

Two witnesses must sign. Only one of the two witnesses can be a health care provider or an employee of a health care provider giving direct care to me on the day I sign this document.

Witness One:

(i) In my presence on _____ (date), _____ (name) acknowledged his/her signature on this document or acknowledged that he/she authorized the person signing this document to sign on his/her behalf.

(ii) I am at least 18 years of age.

(iii) I am not named as a health care agent or an alternate health care agent in this document.

(iv) If I am a health care provider or an employee of a health care provider giving direct care to the person listed above in (A), I must initial this box: []

I certify that the information in (i) through (iv) is true and correct.

(Signature of Witness One)

Address: _____

Witness Two:

(i) In my presence on _____ (date), _____ (name) acknowledged his/her signature on this document or acknowledged that he/she authorized the person signing this document to sign on his/her behalf.

(ii) I am at least 18 years of age.

(iii) I am not named as a health care agent or an alternate health care agent in this document.

(iv) If I am a health care provider or an employee of a health care provider giving direct care to the person listed above in (A), I must initial this box: []

I certify that the information in (i) through (iv) is true and correct.

(Signature of Witness Two)

Address: _____

REMINDER: Keep this document with your personal papers in a safe place (not in a safe deposit box). Give signed copies to your doctors, family, close friends, health care agent and alternate health care agent. Make sure your doctor is willing to follow your wishes. This document should be part of your medical record at your physician's office and at the hospital, home care agency, hospice or nursing facility where you receive your care.

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Choices and Changes		September 17
Clinician-Patient Communication		September 30
NIOSH-Approved Spirometry Training		October 5 – 6
Caring for Torture Survivors		October 9
Strategies in Primary Care Medicine		October 14 – 17
Difficult Clinician-Patient Relationships		October 21
Choices and Changes		November 5
Critical Care		November 12 – 13
HIV Update		November 20
Cardiovascular Medicine		December 3 – 4
Pediatric Orthopaedic Update		December 4

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A Calendar of Continuing Medical Education Courses

Provided through the MMA Committee on Accreditation and CME. For assistance with scheduling meetings or for information on future medical meetings and CME courses, please contact the MMA office: 3433 Broadway Street NE, Suite 300, Minneapolis, Minnesota 55413-1761; 612/378-1875. For a complete listing of our calendar, visit the MMA home page at www.mnmed.org. Information for each entry is arranged by date; name of program; primary sponsor; location; contact person.

SEPTEMBER 1998

Sept. 11 **Bloodless Medicine and Alternatives to Transfusion** Hennepin County Medical Center; Pillsbury Auditorium/HCMC, Minneapolis, MN. CONTACT: Ann Samways, HCMC CME, 701 Park Avenue, Mail Code 861B, Minneapolis, MN 55415; 612/347-2078.

Sept. 11-13 **Annual Ambulance Medical Directors Retreat** Hennepin County Medical Center; Radisson Arrowwood, Alexandria, MN. CONTACT: HCMC CME, 701 Park Avenue, Mail Code 861B, Minneapolis, MN 55415; 612/347-2075, toll-free 888/263-4262.

Sept. 13-16 **Second Annual Meeting: Heart Failure Society of America** University of Minnesota/Continuing Medical Education; Boca Raton Resort and Club, Boca Raton, FL. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 13-18 **Advances in Diagnostic Radiology and Advanced Radiology Life Support Course** Mayo Foundation; Banff Springs Hotel, Banff, Alberta, Canada. CONTACT: Office of Continuing Medical Education, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Sept. 14-15 **Advanced Life Support in Obstetrics (ATLS)** Allina Health System; United Hospital, St. Paul, MN. CONTACT: Julie Page, Allina Health System Clinical Education and Research Administration-81475, 5601 Smetana Drive, PO Box 9310, Minneapolis, MN 55440; 612/992-3897.

Sept. 15 **Endorectal Ultrasonography** University of Minnesota/Continuing Medical Education; Midway Outpatient Clinic, St. Paul, MN. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 16 **Molecular Biology of Colorectal Cancer** University of Minnesota/Continuing Medical Education; Radisson Hotel Metrodome, Minneapolis, MN. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Infection Control Courses

The following activities have been designed to meet the Minnesota Board of Medical Practice physician licensure requirement for CME credit in the subject of infection control.

Sept. 10 **The Hidden Epidemic: A Conference on Sexually Transmitted Diseases** University of Minnesota Department of Medicine, Minnesota Department of Health, MATEC, and the Minnesota AIDS Project; Country Inn Suites, Mankato, MN. CONTACT: Sarah Rybicki, 515 Delaware Street SE, 1-210 Moos Tower, Minneapolis, MN 55455; 612/625-6979.

Sept. 11 **The Hidden Epidemic: A Conference on Sexually Transmitted Diseases** University of Minnesota Department of Medicine, Minnesota Department of Health, MATEC, and the Minnesota AIDS Project; Hotel Sofitel, Bloomington, MN. CONTACT: Sarah Rybicki, 515 Delaware Street SE, 1-210 Moos Tower, Minneapolis, MN 55455; 612/625-6979.

Sept. 11 **The Hidden Epidemic: A Conference on Sexually Transmitted Diseases** University of Minnesota Department of Medicine, Minnesota Department of Health, MATEC, and the Minnesota AIDS Project; Bennett's on the Lake, Duluth, MN. CONTACT: Sarah Rybicki, 515 Delaware Street SE, 1-210 Moos Tower, Minneapolis, MN 55455; 612/625-6979.

Sept. 12 **The Hidden Epidemic: A Conference on Sexually Transmitted Diseases** University of Minnesota Department of Medicine, Minnesota Department of Health, MATEC, and the Minnesota AIDS Project; Ramada Plaza Suites, Fargo, ND. CONTACT: Sarah Rybicki, 515 Delaware Street SE, 1-210 Moos Tower, Minneapolis, MN 55455; 612/625-6979.

ENDURING MATERIALS

Videotapes: **Bloodborne Pathogens, Antibiotic Update and Resistance, TB Update, Flesh-Eating Strep** Allina Health System. CONTACT: Patricia E. Walton, 5601 Smetana Drive, PO Box 9310, Minneapolis, MN 55440-9310; 612/992-2867.

Videotapes: **Antibiotic Resistance/STDs, HIV/Adult Immunizations, Diarrheal Parasitic Diseases/Foodborne Diseases** University of Minnesota. CONTACT: Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600 or 800/776-8636.

Sept. 16 **Pelvic Floor Physiology Course** University of Minnesota/Continuing Medical Education; Midway Outpatient Clinic, St. Paul, MN. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 16-19 **First National Conference on Infanticide: Asphyxiation, Shaken Baby, and Neglect** Hennepin County Medical Center; St. Paul Radisson, St. Paul, MN. CONTACT: HCMC CME, 701 Park Avenue, Mail Code 861B, Minneapolis, MN 55415; 612/347-2075, toll-free 888/263-4262.

Sept. 16-19 **Radiology Refresher Course** University of Minnesota/Continuing Medical Education; Silverado Resort, Napa, CA. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 17-19 **Principles of Colon and Rectal Surgery (61st Annual Course)** University of Minnesota/Continuing Medical Education; Radisson Hotel Metrodome, Minneapolis, MN. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 18 **Annual Contemporary Issues in Hemodialysis** Hennepin County Medical Center; Sheraton Midway Hotel, St. Paul, MN. CONTACT: Ann Samways, HCMC CME, 701 Park Avenue, Mail Code 861B, Minneapolis, MN 55415; 612/347-2078.

Sept. 18 **Primary Care Conference** St. Mary's/Duluth Clinic Health System; Spirit of the North Theatre, Fitger's Complex, Duluth, MN. CONTACT: Diane Torvick, 400 East Third Street; Maildrop 5AV2ME, Duluth, MN 55805; 218/725-3838.

Sept. 18-19 **Current Trends in Ophthalmology: Ophthalmic Lasers** Phillips Eye Institute; DoubleTree Grand Hotel, Bloomington, MN. CONTACT: Julie Page, Allina Health System Clinical Education and Research Administration-81475, 5601 Smetana Drive, PO Box 9310, Minneapolis, MN 55440; 612/992-3897.

Sept. 19-20 **Clinical Autonomic Quantitation Workshop** Mayo Foundation; Mayo Foundation, Rochester, MN. CONTACT: Office of Continuing Medical Education, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Sept. 24-26 **Mechanical Ventilation: Principles and Applications** University of Minnesota/Continuing Medical Education; Hyatt Regency Hotel, Minneapolis, MN. CONTACT: Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

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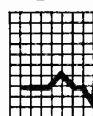
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Sept. 25 Tobacco Regulation: The Convergence of Law, Medicine, and Public Health Center for Health Law and Policy and Minnesota Medical Association; Minneapolis Regal Hotel, Minneapolis, MN. **CONTACT:** William Mitchell College of Law Professional Programming Division, 875 Summit Avenue, St. Paul, MN 55105; 651/290-6434.

Sept. 25-26 Evaluation and Management of Peripheral Vascular and Cerebrovascular Disease University of Minnesota/Continuing Medical Education; Radisson Hotel Metrodome, Minneapolis, MN. **CONTACT:** Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

Sept. 25-26 Advanced Techniques in Cutaneous and Cosmetic Lasers Abbott Northwestern Hospital Institute for Minimally Invasive Technology; Abbott Northwestern Hospital, Minneapolis, MN. **CONTACT:** Julie Page, Allina Health System Clinical Education and Research Administration-81475, 5601 Smetana Drive, PO Box 9310, Minneapolis, MN 55440; 612/992-3897.

Sept. 29 Complementary and Alternative Health Care University of Minnesota/Continuing Medical Education; Radisson Hotel Metrodome, Minneapolis, MN. **CONTACT:** Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, 800/776-8636.

OCTOBER 1998

Oct. 1-2 Annual Forensic Science Seminar Hennepin County Medical Center; HCMC, Minneapolis, MN. **CONTACT:** HCMC CME, 701 Park Avenue, Mail Code 861B, Minneapolis, MN 55415; 612/347-2075, toll-free 888/263-4262.

Oct. 1-2 25th Mayo Clinic Pediatric Days Mayo Foundation; Leighton Auditorium, Siebens Medical Education Building, Rochester, MN. **CONTACT:** Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Oct. 2 Upper Midwest Sleep Society Ninth Annual Meeting Hennepin County Medical Center; Sheraton Inn Airport, Bloomington, MN. **CONTACT:** Ann Samways, HCMC CME, 701 Park Avenue, Mail Code 861B, Minneapolis, MN 55415; 612/347-2078.

Oct. 2-3 Twin Cities Marathon Sports Medicine Conference University of Minnesota/Continuing Medical Education; Sheraton Midway Hotel, St. Paul, MN. **CONTACT:** Registrar, Office of Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600, toll-free 800/776-8636.

Oct. 7 Medical Information in the New Millennium Minnesota Medical Association; Radisson Hotel, St. Paul, MN. **CONTACT:** Vicki Westling, 3433 Broadway Street NE, #300, Minneapolis, MN 55413; 612/378-1875, toll-free 800/DIAL-MMA.

Oct. 8 **Current Issues in Point-of-Care Testing** Mayo Medical Laboratories; Mayo Clinic, Rochester, MN. CONTACT: Julie McAdams, 200 First Street SW, Rochester, MN 55905; 507/284-8599.

Oct. 8 **Domestic Violence: The Invisible Victims** Hennepin County Medical Center; Pillsbury Auditorium/HCMC, Minneapolis, MN. CONTACT: Mary Meredith, HCMC Education Department, 701 Park Avenue, Mail Code 862B, Minneapolis, MN 55415; 612/347-2392.

Oct. 9-10 **Current Issues in Phlebotomy** Mayo Medical Laboratories; Mayo Clinic, Rochester, MN. CONTACT: Julie McAdams, 200 First Street SW, Rochester, MN 55905; 507/284-8599.

Oct. 11-14 **14th Annual Echocardiography in Congenital Heart Disease—Back to the Basics** Mayo Foundation; Mayo Clinic, Rochester, MN. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Oct. 15-16 **Laboratory Diagnosis of Fungal Infections: A Beginning Course** Mayo Medical Laboratories; Mayo Medical Center, Rochester, MN. CONTACT: Julie McAdams, 200 First Street SW, Rochester, MN 55905; 507/284-8599.

Oct. 16 **Seventh Annual Conference for Planners of Continuing Medical Education** Minnesota Medical Association Committee on Accreditation and CME; The Northland Inn, Brooklyn Park, MN. CONTACT: Jane Phillip, 3433 Broadway Street NE, Suite 300, Minneapolis, MN 55413; 612/378-1875, 800/342-5662.

Oct. 16-17 **Fall Conference: Internal Medicine for the Family Physician** Minnesota Academy of Family Physicians; Riverport Inn and Suites, Winona, MN. CONTACT: Rhonda Steller, 600 South Highway 169, Suite 1680, St. Louis Park, MN 55426; 612/542-0130, toll-free 800/999-8198.

Oct. 22-23 **1998 Diabetes Conference: Diabetes in an Ever-Changing World—Are You Ready?** St. Mary's/Duluth Clinic Health System; Duluth Entertainment Convention Center, Duluth, MN. CONTACT: Diane Torvick, 400 East Third Street; Maildrop 5AV2ME, Duluth, MN 55805; 218/725-3838.

Oct. 29 **Geriatric Care for Primary Care Physicians** Mayo Foundation; Leighton Auditorium, Siebens Medical Education Building, Rochester, MN. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

NOVEMBER 1998

Nov. 19-21 **Annual Orthopaedic and Trauma Seminar** Hennepin County Medical Center; Minneapolis Convention Center, Minneapolis, MN. CONTACT: HCMCME, 701 Park Avenue, Mail Code 861B, Minneapolis, MN 55415; 612/347-2075, toll-free 888/263-4262.



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Mankato Clinic, Ltd., is seeking additional BC/BE physicians in the following specialties: occupational medicine, dermatology, orthopedic surgery, pulmonary medicine, radiology, and urgent care. The Mankato Clinic is a 70-physician multispecialty group practice in south-central Minnesota with a trade-area population of 250,000+. Guaranteed salary first year, incentive thereafter with full range of benefits and liberal time off. For more information, call Dr. Bryon C. McGregor, Medical Director, or Roger Greenwald, Executive Vice President, 507/625-1811, or write PO Box 8674, Mankato, MN 56002-8674. (6/98-R)

MDsearch assists medical groups and hospitals in their recruiting efforts. For confidential information on opportunities in the Upper Midwest, send CV and/or call collect Mary Jo Cordes, MDsearch, PO Box 21507, St. Paul, MN 55121; 612/454-7291. Fax: 612/454-7277. (2/93-R)

Urgent Care Physicians: Independent group seeking part-time/full-time physicians to staff our urgent care facilities in Bloomington, Burnsville, Edina, and Lakeville. Contact the director of support services, 612/985-8931, or send inquiries to Quello Clinic Ltd., 7801 East Bush Lake Road, Suite 300, Bloomington, MN 55439. (*6/98-R)

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Olmsted Medical Center is seeking BC/BE physicians in family medicine and ob/gyn physicians to join our 75-physician multispecialty group. Great opportunity for well-trained physicians to join a family-friendly group in a dynamic, progressive practice. In addition to its main office

and hospital in Rochester, the Olmsted Medical Center system includes 11 branch office locations in southeastern Minnesota. Excellent salary and benefits including health benefits, malpractice, spending accounts, educational funds, profit sharing, 401K/403B, and relocation assistance. Send CV to Lois Till-Tarara, Olmsted Medical Center, 1650 Fourth Street SE, Rochester, MN 55904; 507/287-2430, or fax 507/285-8973. (*4/98-R)

Beaver Dam, Wisconsin: Dean Medical Center, a 395+ physician private multispecialty group, is actively recruiting a BC/BE internist to join an existing affiliated practice based in Beaver Dam, Wisconsin, approximately 40 miles from Madison. The practice is located in a medical office building adjacent to a 125-bed acute care facility. Beaver Dam is a community of over 14,000 people with excellent recreational resources, including Beaver Dam Lake, which is over 14 miles long with 149 miles of shoreline. The community also has more than 270 acres of parks and high-quality public and parochial school systems, including a technical college and Wayland Academy, a 135-year-old co-ed independent college prep school. This is an excellent opportunity for any physician with interests in cardiology or gastroenterology. A two-year salary plus incentive and excellent benefits are provided. The call schedule is shared with two other internists in Beaver Dam. For more information, contact Scott M. Lindblom, Medical Staff Recruiter, Dean Medical Center, 1808 West Beltline Highway, Madison, WI 53713; work 608/250-1550; home 608/845-2390; or fax 608/250-1441. 3-10/98

Falls Medical Search Seeks Physicians for practice opportunities locally and nationally. To explore new practice options confidentially, send your CV or call Pat Falls, Falls Medical Search, 34 Forest Dale Road, Minneapolis, MN 55410; 612/922-0207 or 800/383-8916. (*5/92-R)

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BC/BE General Pediatrician interested in primary and consultative pediatrics to join independent, physician-owned, multispecialty group located in the northern Minneapolis suburbs. We are seeking a fifth pediatrician to practice at one of our four clinic sites and at one hospital. Excellent call schedule. Competitive salary, excellent benefits package with partnership opportunity. Send curriculum vitae to Stephanie Clark, Physician Services, Columbia Park Medical Group, 6401 University Avenue NE, Suite 200, Fridley, MN 55432; Phone 612/586-5876; fax 612/571-3008. 4-10/98

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BC/BE Internist: The Fergus Falls Medical Group, P.A., is recruiting a seventh BC/BE general internist to join its 34-physician multispecialty group. Additional training with either echocardiography or nephrology/dialysis management would be helpful. Outstanding opportunity for well-trained individual interested in balancing personal values and professional endeavors. Excellent salary/benefits package includes guaranteed salary the first year with full partnership after one year. For confidential information on this opportunity, contact: David T. Bjork, M.D., Bruce E. Money, M.D., or Jim Wilkus, Administrator, 615 South Mill, Fergus Falls, MN 56537, 218/739-2221 or 800/247-1066.

1-9/98

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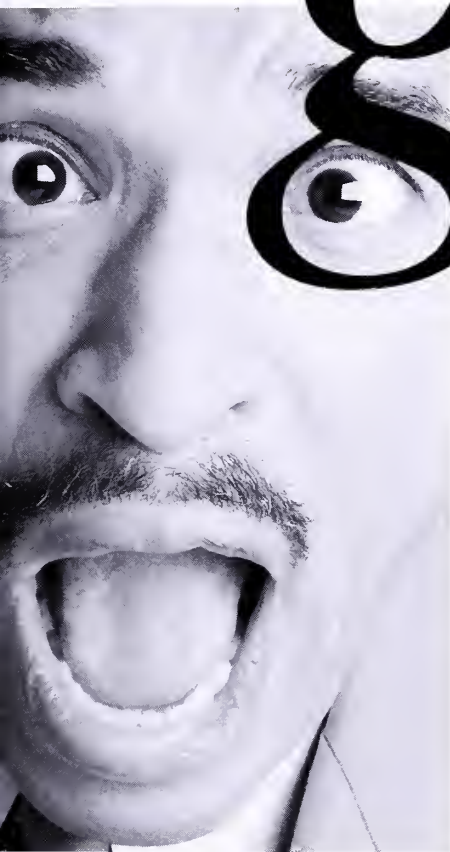


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Minnesota Medicine

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*Babies by PhotoDisc®.
Background: Computer artwork showing intracytoplasmic sperm injection by Mehau Kulyk/
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Infertility

"It is a death that you never fully mourn, a dream that never dies, a hope that never fades."



"Infertility has never been 'just' a medical problem. It's also been a social worry."

Strip the clinical patina off infertility and you'll uncover the agony experienced by infertile couples. Having a child is one of the supreme joys of life. Not being able to have a child can be an obsession that propels couples through painful, expensive marathons of temperature tracking, hormone taking, and finger crossing. Infertility treatment, *Minnesota Medicine's* topic this month, has

shortened the journey and enhanced success while also raising ethical, legal, and theological questions.

Historically, infertility has never been "just" a medical problem. It's also been a social worry. In the late 19th century, as children evolved from a farm-labor necessity to a choice couples made in their pursuit of happiness, leaders of the women's health movement worried that shrinking family size meant women were losing their child-bearing abilities or domestic urge. In the early 20th century, infertility and childlessness became tangled in the eugenics movement, whose proponents worried that the "right" people weren't having enough babies and might foster "race suicide." And in the mid-20th century, a family-centered culture looked at the childless and worried that they were aberrant.

Infertility has never had "just" medical explanations. Over the past two centuries, excessive passion, hatred, jealousy, violent love, masturbation, too much education or creative thought have all been blamed as causes of sterility.

Infertility has never had easy medical treatments. Before the glimmerings of knowledge about the ovarian cycle in the 1920s, women underwent silver nitrate injections, ovariectomies, and ovarian trans-

plants. After the description of the ovarian hormone "oestrin" in 1923, medicine prescribed strange hormonal concoctions like animal thyroid and ground-up pituitaries.

Infertility has always incited controversy. In the enlightened 1990s, we know the physiology of the reproductive cycle. We know the pathological causes of infertility, and we have scientifically tailored treatments for it. Yet the answers we have found in physiology, pathology, and therapeutics have ignited unsettling questions from other disciplines.

Economists ask, who should pay for it? Is infertility a disease that insurance should cover? The \$20,000-per-child price tag turns HMO execs apoplectic.

Lawyers ask, is it a disability protected by the law? If it is, will it unleash a Pandoric flurry of demands for rights for surrogates, single would-be parents, and even embryos?

Theologians ask, when does life start? With all the embryo manipulation of in vitro fertilization (IVF), are we messing with human life?

Environmentalists ask, should we support infertility treatment at all? After all, the world has too many people. What takes precedence, an individual's "right" to bear children or the globe's need for fewer people?

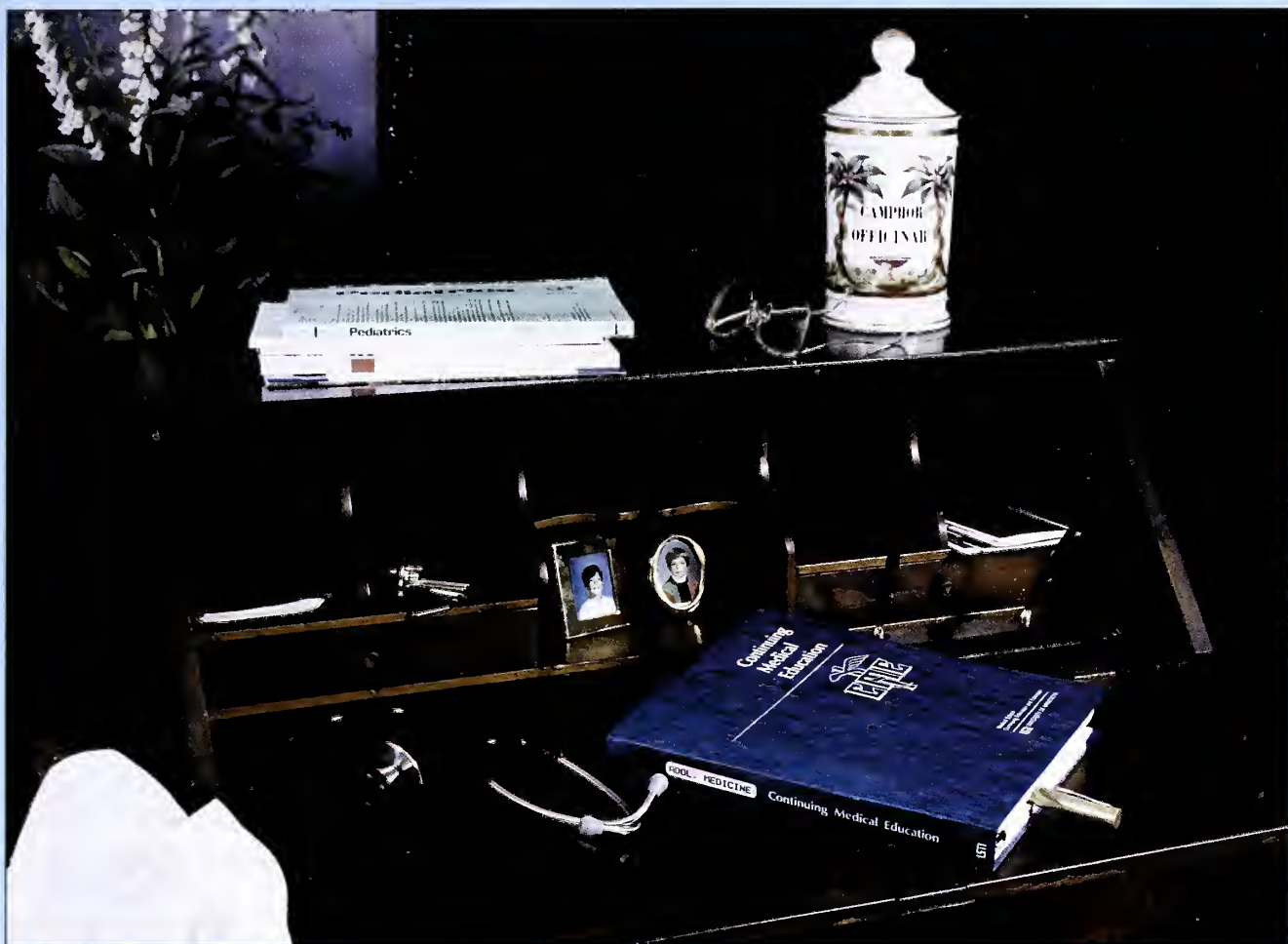
Politicians ask, who is going to regulate it? Currently, much of infertility treatment falls outside the purview of regulators, sparking entrepreneurial flourishes like full-page *New York Times* ads for IVF centers and Internet sperm bank listings.

Ethicists are having a field day. The ethical issues of surrogacy and donor insemination are dwarfed by the mores-rattling implications of designing family genetics and paying for eggs from elite donors.

If you were waiting for the answers in this last paragraph, sorry. The further our knowledge grows, the trickier our search for wisdom seems. I do know the search needs to hear the hopes and dreams of would-be parents while preserving a world worth seeing for their hoped-for children.

.....
—Charles R. Meyer, M.D., Editor-in-Chief

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BIOLOGIST JOHN OLSON
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VINCENT TO THE CUTTING
EDGE OF ASSISTED
REPRODUCTION.

By Kim Palmer

Working on the frontier of assisted reproduction, where the technology races far ahead of the law and public acceptance, brings unique frustrations and rewards. John Olson, executive director of Cryogenic Laboratories, and Minneapolis attorney Judith Vincent, both 55, have experienced that firsthand. Olson, a biologist, runs a Roseville-based sperm bank that was the first of its kind when it opened in 1970. He helped establish many of the standards that now govern the industry. Vincent, who specializes in adoption and surrogacy law, is trying to launch the state's first center for surrogate births. Both of these pioneers have encountered critics and skeptics. But both have found the criticism a small price to pay for the rewards of helping infertile couples create families.

John Olson

Pushing the Scientific Envelope

John Olson, M.S.T., was a biology teacher in his 20s, fresh out of graduate school, when he began the series of experiments that changed the course of his life. He and a couple of friends were experimenting with freezing dog kidneys at the University of Minnesota's St. Paul campus. "It was a fun thing to do," Olson says in a matter-of-fact tone that implies that freezing animal organs is just an ordinary, everyday activity.

Olson and his friends talked with a world-renowned expert who'd developed a technique to freeze animal semen. "We said, 'Let's try it for humans,'" Olson recalls. The early experiments showed promise, so Olson's friends, Art Beisang, a local biologist, and Robert Ersek, M.D., now a cosmetic surgeon in Austin, Texas, formed a company, Genetic Laboratories, in 1970. It was the first private sperm bank in the country, Olson says. "There was one other sperm bank, at the University of Iowa, but it was a research facility."

The new company marketed its services to physicians, targeting their male patients who were about to have vasectomies and might want to bank their sperm in case they changed their minds. Olson, who was still teaching, was hired to open offices in other cities. "I would build labs and train people to work in them," he says. "I'd get on a plane Friday afternoon, build a lab, come back on the red-eye and teach school Monday morning."

The business was not an immediate success. For one thing, few vasectomy patients seemed interested. "They didn't want any more kids," Olson says. The company recruited a few donors in hopes of marketing to couples who did want children, but most inseminations at that time were done with fresh rather than frozen sperm. The medical community doubted the viability of frozen sperm. "A paper came out saying you could freeze sperm for only 30 months—then it went bad," Olson says. "We had to fight that battle." The company also battled public opinion, mainly articles and letters to the editor claiming that artificial insemination was unethical because it was unnatural. Genetic Laboratories was ahead of its time.

By 1973, the partners were trying to diversify into more profitable areas. They bought a small Pennsylvania-based business that harvested pigskin to treat burn patients. Olson was dispatched to Philadelphia, where he packed the equipment in a truck and brought it to Minnesota. He then developed a process to sterilize and freeze the skin so that it could be sold to hospitals around the country. The process revolutionized the industry, Olson says, and Genetic Laboratories finally took off.

Two years later, Ersek saw a need for an arterial vascular shunt that wouldn't roll out of place once it



PHOTOGRAPH BY JOHN NOLTNER

By the mid-1980s, John Olson had become a nationally known expert on cryopreservation of human semen. His sperm bank company, Cryogenic Laboratories, is now a \$1.5 million business with offices in Roseville, Minnesota, Toronto, and New York City.

was inserted in the patient's body. Olson created a shunt from a human umbilical cord with tiny "hairs" cut into the surface, which helped lock it in place. "Now Genetic Laboratories had three businesses: the skin bank, the vascular shunt, and the sperm bank," Olson says.

The sperm bank was by far the least successful, and the partners decided to close the satellite offices. Olson spent another series of weekends flying

around the country to shut down the out-of-state labs.

By 1976, Olson's partners were looking to get out of the frozen sperm business entirely. "Art said [to me], 'This sperm bank is becoming an albatross. Want to buy it?'" Olson recalls. He did, although he continued to work around his teaching schedule, often getting to the lab at 5 a.m., then heading to his classroom. He made enough money from sperm storage fees to pay the rent on his facility, which had

recommend frozen sperm as the standard of care because it greatly reduces the risk of sexually transmitted diseases.)

At the same time, insemination technology had progressed to the point that the optimal time for fertilization was narrowed to a 12-hour window. Getting a fresh sperm sample and performing the insemination in that amount of time was problematic—which gave frozen semen another advantage, Olson says. Concerns about its viability had started to diminish. "We've got semen we've had here since Day 1 with no loss in viability if there's proper storage," he says. He notes that he has seen successful pregnancies result from sperm kept in frozen storage for 20 years.

By the mid-1980s, Olson had become a nationally known expert on cryopreservation of human semen; he lectured around the country and overseas. "There were no standards, so you had to set your own," he says. Olson helped develop the standards now used by the

American Association of Tissue Banks.

In 1988, Olson was able to leave his teaching job, but just to be on the safe side, he requested a five-year leave. He extended the leave five years later, and finally "retired" from the Roseville school district last year. Cryogenic Laboratories, with offices in Toronto and New York City as well as Roseville, is now a \$1.5 million business. Still, Olson says, "It's not real profitable. There's so much overhead."

Olson's family is still involved in the business. Kristin works in the office, dealing with patients, and Erik is a lab assistant and works in client services in the urology division. Olson's wife, Lois J. Olson, is co-owner of the business and is proprietor of Recollections, an antique shop. His stepdaughter, Heather Hoglund, works in data management.

Declining Sperm Counts

Olson's biggest challenge today is finding suitable donors. Cryogenic Laboratories accepts fewer than 5 percent of the men who offer to donate. Donors are tested for more diseases, such as cystic fibrosis, than in the past. But the majority of donors are rejected because of inadequate sperm count. "Sperm counts are significantly reduced," Olson says. "It's scary." He attributes the drop to stress, environmental pollutants, and food additives. Some specialists believe that by the year 2010, only 5 percent of men will meet the sperm-count standards required to be a donor. Several national organizations are researching this subject. "I've got records that nobody in the world has," Olson says. "The CDC wants our sperm for research, and we happily provide it. The NIH has contracted for us to hire someone to tabulate

"I HAD NO GREAT VISIONS OF CRYOGENIC LABORATORIES BEING BIG. IT WAS SORT OF A HOBBY."

—John Olson, M.S.T.

been relocated from Minneapolis to Roseville, but not enough to pay himself a salary. His former wife, Janice, and their children, Kristin and Erik, helped out on weekends. The company, now called Cryogenic Laboratories, was still tiny. "I had no great visions of it being big," Olson says. "It was sort of a hobby."

Demand Grew

But in the 1980s, the landscape began to change. For one thing, the pool of adoptable babies in the United States was dwindling, as unwed motherhood became more socially acceptable and abortion became more common. Without babies to adopt, infertile couples were demanding treatment, and the medical profession had to come up with options.

As demand for sperm donors increased, Olson developed a catalog listing donors and their characteristics, which he sent to doctors' offices so that patients could choose a donor. This was a departure from the standard practice at the time; typically, a physician would send a patient's characteristics to the sperm bank and the sperm bank would select a match.

Then the AIDS crisis hit. In 1985, the Centers for Disease Control determined that HIV could be transmitted through semen and that the virus could lie dormant for up to six months after infection. Instantly, frozen semen became a desirable alternative to fresh because donors could be tested for HIV six months after donating to make sure they were virus-free at the time of donation. (The CDC and the American Society for Reproductive Medicine now

our data, and we'll be publishing something shortly."

About one-fourth of donors are college students trying to make a little extra money, Olson says. (Donors receive \$150 to \$250 for four to six appointments.) The rest are professional men, motivated less by money than by a desire to help others bear children. The maximum age for donors is 40, Olson says. "We prefer them to be under age 38 because we want time to spend with them. We invest almost a year before we can use them."

Cryogenic Laboratories continues to work on the cutting edge. Olson has launched two new affiliated businesses: ReproTech, which stores frozen embryos for IVF centers and will help provide couples with donor embryos; and Cryo-Tech, which freezes and stores umbilical cord blood, the cells of which can be used for autologous transplants for some cancer patients. Olson is working on a new procedure to cryopreserve testicular tissue so urologists can use it to perform intracytoplasmic sperm injection (ICSI), a procedure that injects one sperm cell into an egg. "The conception rate [with ICSI] is extremely high," says Olson. He points out that the new technology offers hope to paraplegics and other men who may not be able to ejaculate. (See related article, page 27.)

Olson hopes to get his message of pretherapy semen cryobanking to more physicians. One survey showed that a majority of hematologists and oncologists don't inform their male patients that they may become infertile as a result of radiation or other treatments and might want to bank their sperm. "This is an education process that I've failed at," Olson says. "One of the most disheartening things I've ever experienced in my life was having a booth at an oncology conference. The nurses thought it was exciting. But the oncologists walked by and laughed." Only six doctors stopped at the booth during the three-day conference, he says.

Fortunately, there are plenty of rewards. "When I sit under the apple tree and contemplate life, it's majorly exciting that what I do today will be here until the end of time," Olson says. "A child is born. That child will beget children. That to me is a great reward."



PHOTOGRAPH BY JOHN NOTNER

Attorney Judith Vincent's announcement earlier this year that she intends to open the state's first surrogacy center led to a firestorm in the Legislature, with critics introducing a bill to make paid surrogacy illegal in Minnesota. Vincent, who handles 10 to 15 surrogate birth adoptions each year, says she can sympathize with some of her critics, but she also has seen how satisfying surrogacy can be for both the birth and adoptive parents.

Judith Vincent Doing Battle for the Babies

Minneapolis attorney Judith Vincent once took the MMPI (Minnesota Multiphasic Personality Inventory) as part of a college course. "All my scores were in the normal range, except that it said I tended to be a conformist," she says wryly.

So much for MMPI scores. Today Vincent is a lightning rod in the storm surrounding surrogate

motherhood. Her announcement earlier this year on a public radio show that she intended to open the state's first surrogacy center led to an explosion in the Legislature, she says. Critics, likening surrogacy to "baby-selling," introduced a bill to make paid surrogacy illegal in Minnesota. Vincent and her supporters countered by lobbying for a bill requiring that surrogacy centers be licensed, similar to adoption agencies. The issue will be debated in Legislature during the next session. "It's hard to judge what will happen,"

"WE WOULD PROVIDE PROFESSIONAL SAFEGUARDS FOR ALL THE PEOPLE INVOLVED. ONE OF THE KEY PROBLEMS IS THAT PEOPLE GET HOOKED UP OVER THE INTERNET WITH A POTENTIAL SURROGATE THEY DON'T KNOW. THE SURROGATE COULD TURN OUT TO BE OFF THE WALL, BUT THE PARENTS ARE STILL TEMPTED TO GO AHEAD."

—Judith Vincent, J.D.

Vincent says. "If I was going to give odds, I'd say our chances are 50-50."

Vincent wasn't surprised at the negative reaction to her plan. "I was expecting it; I've been through this before," she says. "I know what's going to be thrown at me." Nine years ago, a bill making it illegal for attorneys or others to arrange adoptions for a fee and banning all ads for adoption made it to the floor of the House, but was killed in the Senate. "It was a firestorm," Vincent recalls. "You're on the cutting edge, and you're going to have opposition. I have to take [this issue] on as a crusade." She may be ready for battle but she doesn't relish it. "I hate lobbying," she says.

The problem, as Vincent sees it, is that today's medical technology is light years ahead of the law. Minnesota is not among the 14 states that have passed laws regulating surrogate births. "In Minnesota, if you give birth, you have parental rights," says Vincent. "If the intended parents back out, it's [the mother's] problem." Courts in other states have looked at "intent to parent" when determining parental rights, but to date, no cases in Minnesota have tested the law.

That's not to say there haven't been surrogate births. Vincent handles 10 to 15 surrogate birth adoptions each year. About half of those involve women who are personally involved with the adoptive parents, such as a sister, cousin, or close friend.

The other half involve strangers who are paid to carry a child for an infertile couple.

Vincent sympathizes with some of her critics' arguments. "People say, 'There are so many kids already who need homes. Why create more?' It's a legitimate issue." Vincent adopted her own two children, David and Lara, in the 1970s for that reason; she has not experienced infertility firsthand. "The problem is, a lot of these kids now are not available for adoption," she continues. Many children born into less-than-ideal homes don't become available for adoption for years, until they're 4, 5, or 6 years old, Vincent says. "The system takes so long. Most people want a baby so they can have control over its early environment."

Vincent sees a great need for a surrogacy center, which would match surrogate mothers with infertile couples and provide all the nonmedical services associated with the pregnancy and adoption. "We would provide professional safeguards for all the people involved," Vincent says. "One of the key problems is that people get hooked up over the Internet with someone they don't know. They are matched with a surrogate, then the psychological testing is done. That's backward. They should do the testing first. The surrogate could turn out to be off the wall, but the parents are still tempted to go ahead—to them, that's a baby, and they don't want to give it up." Screening works both ways, Vincent notes. Surrogate mothers want to be assured that the child will be raised in a good environment.

The center also would offer ongoing counseling. During adoption, birth mothers typically receive counseling and support. But there's no such requirement for surrogate mothers. "Once pregnancy is achieved, you're on your own," Vincent says. "Studies show that if there's ongoing counseling, there are fewer problems with people changing their minds."

Financial arrangements would also be administered by the surrogacy center. A couple typically pays a surrogate \$10,000 plus money to cover expenses such as health insurance and maternity clothes. The center would help ensure that intended parents aren't charged for inappropriate expenses, Vincent says, and would protect the surrogate as well: "Once you're pregnant and the money doesn't show up, you can't be unpregnant and go back to work. [The center] would provide some security."

From Classroom to Courtroom

Vincent, who was born in Buffalo, New York, and graduated from the University of Buffalo, began her

career as a teacher in 1965. "In those days, women didn't go to law school, or if they did, they were hidden away writing," she says. "What I enjoy is working with people." She taught high school history for about 10 years and developed an interest in alternative education. With her husband and another couple, Vincent helped start an alternative private school in Minneapolis called Second Foundation, which both her children attended. "We wanted to get away from the rigidity of public education," she explains. Rather than forcing children to learn prescribed lessons, she wanted to create an environment in which children want to learn. "We don't want them to lose their curiosity, their eagerness to learn," she says.

Shortly after Vincent began law school at the University of Minnesota in 1975, her interest in family law emerged. "I was most interested in people-oriented law, things that affected families," she says. "I liked juvenile court. I felt I could make a difference in cases involving abuse and neglect."

As her adoption practice grew, she found herself gradually handling more surrogacy cases. By the time couples come to Vincent to arrange a surrogate birth, often they're exhausted from years of infertility treatments. Others seek surrogacy before undergoing the full range of infertility treatments because they want to invest in a more likely outcome than in vitro fertilization.

Sometimes women who want to be surrogates contact Vincent. "Surrogates tend to fall into two categories," she says. "Some are motivated solely by money. Others have altruistic motives—they want to help a couple. Those are the surrogates everyone wants. I wouldn't advise anyone to work with [those motivated by money]." She explains, "How much money is enough? Some of them try to take advantage of the couple. They keep asking for more money: 'If you don't want me to smoke and drink, pay me more.'"

Many surrogate mothers are recruited over the Internet; others through newspaper ads. Surrogates generally must be between 21 and 35 and have had at least one successful pregnancy, Vincent says.

Calling on Doctors to Join the Debate

Vincent would like to see the medical community, particularly fertility specialists, get more involved in the surrogacy debate. "They need to be in the discussion or they'll be cast as the villains," she says. People who oppose artificial methods of facilitating birth sometimes see medical professionals as amoral technophiles willing to do anything to advance research. "Doctors need to show that they're intelligent and ethical, not mad scientists," Vincent says. "There's a backlash against the medical community in this area.

They're not seen in the same light as cancer researchers. They need to be in the debate to show, 'We are good people. We are concerned.' They also have the technical knowledge to tell us where we're going. The Legislature looks at the here and now. It rarely considers the 'what ifs?'"

What keeps Vincent motivated to continue fighting on behalf of surrogacy? "The babies," she says softly. "When you're working with a family who wants to parent, you've helped create that family. Wanting to parent is such a basic human desire."

Traditional adoption is bittersweet, she says. "Usually the pregnancy is unplanned, and the [birth] mother has mixed feelings. She feels wonderful about giving her baby to people who want to be good parents, but there's some sadness. With surrogacy, it's planned. The mother has gone into it trying to get pregnant for that couple. The majority of [surrogate mothers] say, 'I can't tell you how satisfying it is to do that for parents.' In the vast majority of cases, it's a happy outcome. It's the happiest area of law. I don't know what else you could do that would be so rewarding."

MM

Kim Palmer is a Twin Cities-based free-lance writer who frequently writes about health care issues.

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The Ethics of Egg Donation

Despite possible harmful consequences, human eggs are becoming a market commodity.

Demand is growing for donated human eggs. They are used by women who cannot conceive using their own eggs, by women at risk of passing on a serious genetic disease, and most recently by older women, even into the postmenopausal years.

This increased demand requires growing numbers of healthy women to donate a few of their eggs for use by fertility clinics. But donated eggs still remain scarce, and as the price being paid to donors rises well into the thousands of dollars (the average payment in New York City is reportedly \$5,000 per donation and rising), it is time to ask whether we've created a market in human eggs.

Rightly or wrongly, fertility treatment is still viewed by most health plans as "optional" and not part of a basic health care package. Thus, as with cosmetic surgery or other elective procedures, patients assume almost all the costs—creating a market for services rather than a planned system for allocating a scarce resource. Competition among fertility clinics for donor eggs has led to higher prices for donation, with increasing costs passed on to recipients. Limited government funding for research on assisted reproduction means that much of the experimental

therapy performed in fertility clinics falls outside government research regulations. These factors have contributed to a fertility enhancement "industry" governed by whatever rules individual clinics choose to employ, often based

By Jeffrey P. Kahn, Ph.D., M.P.H.

on voluntary guidelines proposed by professional organizations. Voluntary guidelines lack the teeth to affect practice in the ways that third-party payers or government regulations do.

How did eggs become a commodity to be bought and sold when the medical community has steadfastly refused to allow the buying and selling of human organs? One way to answer this question is to consider the kinds of tissues or body parts that historically have been donated for money. Blood, bone marrow, and sperm are all replenishable, have low or no risk associated with their donation, and bring relatively low payment.

Are eggs comparable to these tissues or are they more like solid organs, such as a kidney or heart? They bear some resemblance to both. Like donating blood, sperm, or bone marrow, egg donation involves parting with something that will not otherwise be used or can be replenished. But it is certainly more uncomfortable and risky than blood or sperm donation.

While donated bone marrow or kidneys are just as precious as human eggs, we do not allow a market for either of them. Why not? First, there are concerns about the exploitation of potential donors. Everybody has a price, and it is unethical to create situations where people overlook the risks of donation (pain, disability, long-term health effects, and even death) for monetary inducements. Second, as a society we have decided that it is unfair to base access to scarce health care resources on one's ability to pay. Selling kidneys would put transplants out of reach for many patients and would allow the rich to outbid others.

Neither of these reasons for barring a market is less relevant for egg donation than for kidney donation. In fact, there are additional risks particular to egg donation. For example, studies have not yet shown the long-term effects of the drugs taken to produce superovulation in egg donors. Many potential egg donors also worry about the psychological impact of having genetically related children somewhere in the world. In addition, if the same few women are allowed to donate eggs repeatedly within a given community, unknowing half-siblings

may be classmates or friends, and could even have children together.

Given these concerns, should we follow the lead of fertility clinics and conclude that monetary incentives are an effective and appropriate method for creating a supply of a precious medical material? Or should we view the burgeoning



market in human eggs as inappropriate?

I believe the closest we should come to a market for eggs or organs is to establish a capped payment to donors—a standard and consistent monetary incentive to encourage altruism. We should not encourage donors to ignore the risks of their donation, and the higher the pay and the greater the

competition among clinics, the more likely that is to happen. Donations should not be allocated based on market forces but according to medical need and waiting time, much as solid organs are allocated for transplantation.

This approach will help avoid exploitation of both egg donors and recipients. The price of making

Princeton Ova Are in Demand

Female students at Princeton have a commodity that some people want: healthy eggs that (they hope) promise smart, attractive, and athletic offspring. For the last few years, individuals and fertility centers have advertised in *The Daily Princetonian*, seeking students to “donate” their eggs for \$3,500 to \$6,000. One ad offered an extraordinarily high fee of \$35,000. Ads for egg donors have run this year in every Ivy League student newspaper.

Lea Tate, of Potomac, Maryland, advertised in the *Prince* for about two weeks; her ad attracted readers with the words “Need extra income now?” The only other places she has advertised are in other Ivy student newspapers because, she says, “I’m looking for the best possible eggs.” She is offering \$4,000 for three cycles of retrieved eggs. Several students, but none from Princeton, have responded, says Tate.

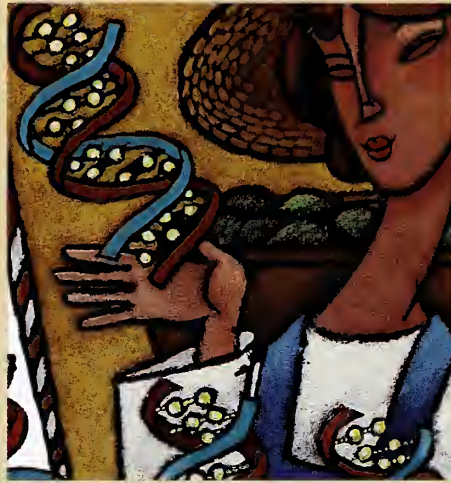
Another ad, placed by a couple, seeks an egg donor who is “athletic, blonde, small to medium build.” And an ad from an alumna starts with, “Help our dream come true.”

The International Fertility Center, based in Indianapolis, Indiana, placed the ad that offered \$35,000. (The center didn’t respond to repeated requests for

an interview.) Options National Fertility Registry, located in Garden Grove, California, has placed ads offering \$3,500 to \$5,000. Numerous Princeton students have responded to Options’ ads, according to the organization’s director of communications,

Troy Baker. Half a dozen are in the screening process, he says, and probably one or two will be selected as donors. According to Baker, the couples for whom Options placed the ads wanted only Princeton egg donors. Some couples, he says, look for “specific genes” such as those of an “Asian Harvard graduate.” Over the past decade, he adds, Options has placed hundreds of such ads in college publications, although most clients find donors by searching the organization’s online database.

Katharine Tillman, president of the Princeton Bioethics Forum, says one of her roommates told her that she would donate her eggs in order to earn the fee offered, though Tillman says the roommate hasn’t followed through. “People have the right to do what they want with themselves, and that includes their eggs,” says Tillman. College campuses are good places to advertise, she observes, because students are young and healthy and often need the money.



commodities of human body parts is even higher than the price of an organ shortage. **MM**

Jeffrey Kahn is director of the University of Minnesota Center for Bioethics.

Portions of this article appeared in one of Dr. Kahn's biweekly "Ethics Matters" columns on CNN Interactive, at www.cnn.com/HEALTH/.

According to Professor of Molecular Biology Lee M. Silver, the critical ethical issue in advertising for egg donors is a woman's being induced by money to do something that will harm her physically or psychologically, or that she may regret later on.

An egg donor is injected with hormones for several weeks to stimulate her ovaries; then a doctor removes the eggs by inserting a needle through her vagina into her ovaries and suctioning out the eggs. According to Options, common side effects include hot flashes, mood swings, and changes in appetite. Serious complications, says Silver, are rare.

"Reproductive technology is being taken over by the marketplace," observes Silver, who notes in his book "Remaking Eden: Cloning and Beyond in a Brave New World" that the first pregnancy to be reported from a donated egg was in 1983. Ten years ago, egg donors were really donors, says Silver. They may have received only minimal payment. It was doctors who tried to find donors for their patients, and sometimes they didn't succeed, he adds. In the future, Silver predicts, the buying and selling of eggs might occur only through the World Wide Web, where couples already can shop for sperm and egg donors through online catalogues.

People seeking the best possible sperm don't need to advertise in the *Prince*, says Silver, because sperm donors are easy to find in online catalogues. There are two companies, he says, that specialize in sperm samples from MIT, Harvard, and Stanford.

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Move Over, Mother Nature

Making Babies with Mother Science



By Miriam Karmel Feldman

*T*wenty years ago this summer, Louise Joy Brown, the world's first test-tube baby, was born. Her birth not only challenged traditional assumptions about how babies are made, but ushered in a brave new world of medicine, one that continues to push the limits of human reproduction while raising numerous and complex ethical questions.

COMPUTER ARTWORK BY MEHAU KULYK/SCIENCE PHOTO LIBRARY

Baby Louise and the nascent field of reproductive endocrinology have grown up together. No longer a scientific curiosity, Louise now has plenty of company. In the two decades since her birth, 40,000 babies have been born in the United States through in vitro fertilization (IVF), which is the most commonly used assisted reproductive technology (ART). And while most people still go about having babies the low-tech way, the field of reproductive medicine has become so advanced that it can outdo Mother Nature.

"If you have Superman and Lois Lane at the Radisson at midcycle, the chances for pregnancy are no more than 20 percent," says Lisa Erickson, M.D., a reproductive endocrinologist and infertility subspecialist. At Abbott Northwestern's Center for Reproductive Medicine, where Erickson works, the pregnancy success rate is 50 percent. "That's two to three times better than what Mother Nature can do," boasts Erickson, whose two children are IVF babies. "What we are really doing is helping people ovulate a year's worth of eggs in one month. That will be 10 embryos, and we can take the best two or three, and through that selection process we beat the odds on a monthly basis."

Erickson says her job is to demystify a straightforward medical procedure. "IVF is medically as easy as it can possibly be." The challenge, she says, is on the financial and emotional side. The question of who shall pay for such high-tech treatment is still unresolved (see the sidebar, page 18). And though pregnancy rates at Minnesota's clinics are high at around 50 percent, this still means half of the women who try assisted reproductive technology fail to get pregnant.

Infertility is defined as failure to conceive after 12 months, during which time a couple has had intercourse without using contraception. The Department of Health and Human Services reported that 15 percent of women of childbearing age in 1995 sought infertility advice, up from 12 percent in 1988. And according to the 1995 National Survey of Family Growth, data suggest that 6.2 million U.S. women had fertility problems in 1995, compared with 4.5 million in 1982. Delayed childbearing, an increased awareness of the problem, and a growing number of women with gonorrhea or chlamydia-

al infection are seen as factors contributing to this increase.

The Primary Care Physician's Role

Whatever the reason, a growing number of infertile couples will be seeking medical attention for infertility, and there are not enough reproductive endocrinologists to go around. In 1997, the American Board of Obstetrics and Gynecology listed just 667 board-certified reproductive endocrinologists, compared with 28,000 active board-certified ob/gyns. "It's very important that the generalist, the ob/gyn, has some sense of the scope of this problem," says Theodore C. Nagel, M.D., president of Reproductive Health Associates in St. Paul and a clinical associate professor at the University of Minnesota.

Primary care physicians can do much before referring patients to specialists like Nagel. He suggests that physicians should know how to evaluate an infertile couple and how to do more routine procedures, such as ovulation induction or treatment of endometriosis. An initial evaluation might include tests for polycystic ovary syndrome or a host of health problems that affect fertility, such as high cholesterol, dia-

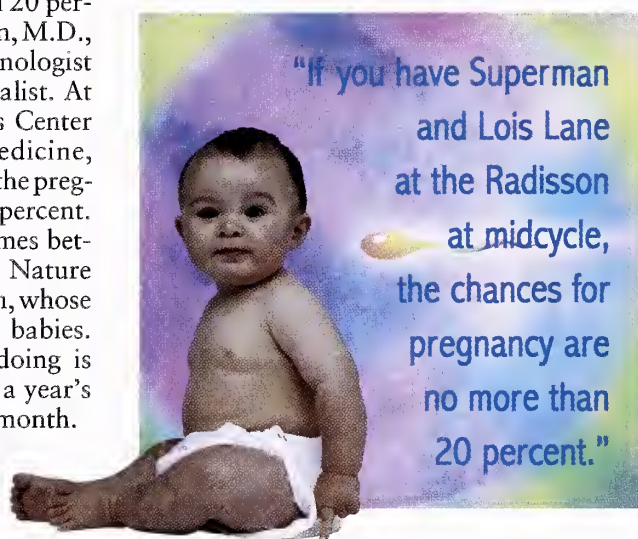
betes, and high blood pressure.

Physicians also must consider male infertility, which for years was disregarded, says Nagel. His "pet peeve" is when health care providers fail to do a semen analysis. Even when it is done, labs often do a poor job, he says.

Expediency is key

Primary care physicians must also know when to let go. "Physicians must know their limits and acknowledge when a problem is beyond their scope of knowledge and refer a patient to a specialist," says Diane N. Clapp, B.S.N., R.N., medical information counselor for RESOLVE, a national support and advocacy group for infertile couples based in Somerville, Massachusetts. The worst scenario, she says, is when a woman stays with an ob/gyn and is on Clomid for 12 months.

"There is no reason why it should take more than a year to find out what is wrong with the couple, or to have them to the stage of being ready for IVF," says Randle Corfman, M.D., Ph.D., of the Midwest Center for Re-



productive Health in Minneapolis. "Expediency is the name of the game." Like Nagel, he suggests a checklist of services the primary care physician can provide, such as performing a semen analysis, assessing the ovaries, and testing to see if the uterus and fallopian tubes are normal. Physicians also can give medical therapy for four to six months. Then the patient should be sent straight to IVF, which Corfman insists is a first-line treatment (as op-

posed to surgery or many other medical therapies for the woman or the man).

The longer the delay, the harder it is for these women to get pregnant, says Corfman. Yet in the Twin Cities, Corfman routinely sees patients who have struggled two to six years before coming to him, a situation he attributes to the strong presence of managed care, with its incentives to keep patients away from specialists. He says

Should Health Care Insurance Cover Infertility Treatment?

Twenty thousand dollars. "That's how much Emily cost," says Becky Bettinger, who went through the in vitro fertilization (IVF) program at St. Paul's Reproductive Health Associates (RHA) in order to have Baby Emily. Becky, who runs a home day care center, and her husband, Gary, a supervisor in the wood department at Ace Window Company in Monticello, used their retirement savings to pay for Emily. "If we did not have that, we would not have our baby," Becky says.

Who should pay for fertility treatment and how? In Minnesota, and in most other states, couples like the Bettingers, who have some financial cushion, are paying for it themselves. But advocates for infertile couples are working behind the scenes, trying to get insurance coverage to pay for at least some of the cost, which typically runs between \$8,000 to \$10,000 for one cycle of IVF, and between \$200 to \$3,000 per month for hormone treatment to stimulate and boost egg production.

Twelve states (Minnesota is not one) mandate health insurance for infertility diagnosis and treatment, including IVF, according to the American Society for Reproductive Medicine. Maryland was the first, in 1985, and the others quickly followed, but in recent years no new states have joined the list. That supports a trend observed by Randle Corfman, M.D., Ph.D., reproductive endocrinologist with the Midwest Center for Reproductive Health in Minneapolis, where only 15 percent of couples have some sort of insurance coverage. "Seven years ago, I thought there would be more. Now there's less," Corfman says, citing an overextended health care dollar as the primary reason.

But advocates for coverage have not given up. RESOLVE of the Twin Cities, an advocacy and support group for infertile couples, has been working for years to get coverage for infertility treatment. Attempts were made in 1989, then in 1997. This year Sen. Ember Reichgott Junge, DFL-New Hope, intro-

duced a bill for mandated coverage, a concept once endorsed by RESOLVE but now seen as detrimental to the quality of care.

Critics of mandated coverage say it brings out the worst in medicine and can lead to poor success rates, says Corfman, pointing to the higher IVF success rates in Minnesota compared with Illinois, where coverage is mandated. "If you know you're going to get reimbursed no matter how well you do, the tendency is to skip things that would be more likely to guarantee a successful outcome. The incentive is not quality of care. The incentive is how many times do you hit the charge button," he says. "It becomes a fast-food infertility approach."

Sandra Bengtson, co-president of RESOLVE of the Twin Cities, agrees. "There's a fine line between making IVF affordable for families and also keeping the high degree of integrity and care that we get [in Minnesota]."

Now, moving away from mandated coverage, RESOLVE has turned its efforts to hosting roundtable discussions with legislators, physicians, and third-party payers in an effort to come up with a reasonable solution, says Amy Hill, the organization's advocacy chair. "We're trying to get the insurance companies to offer a product that employers or individuals can buy," Hill says. "We're not asking for something for nothing. We're willing to pay for it."

RESOLVE wants assisted reproductive technology (ART) to be treated like other medical procedures. "Often, insurance companies are arguing these are quality-of-life issues, not health. We're arguing this is a health issue. It's a disease of the reproductive system, which is one of the major systems of the body," Hill says.

Michael Scandrett, executive director of the Minnesota Council of Health Plans, an association of nonprofit health care organizations, argues that most insurance companies offer ART as an optional rider, but buyers turn it down. "Buyers look at

his success rate is higher with the approximately 70 percent of his patients from outside the Twin Cities, including other states, where managed care isn't as entrenched and referrals are made sooner.

"Age is the enemy," agrees Erickson, who recommends that all female patients over age 35 be directed to a reproductive endocrinologist once the initial diagnostic evaluation is completed. "The goal is to not lose any

time," she says, adding that time is too often spent on less effective treatment options that happen to be covered by insurance plans.

Minnesota a Leader in the Field

Minnesota gets high marks in the field of reproductive endocrinology. "There aren't any rookies in the state of Minnesota," says Erickson. All four of the IVF clinics are

affordability and what people in that group need. It comes down a question of tradeoffs," says Scandrett. "You're not going to sacrifice the basic health care needs of the entire group in order to potentially provide to a small number of people the extreme measures that may or may not get a couple pregnant."

Susan Wolf doesn't buy that argument: "Having children, or being able to attempt to have children,

The Bettingers were drawn to RHA because of its cost guarantee, but Becky acknowledges that many couples cannot afford to pursue their dream of a baby, moneyback or not. That's why advocates for insurance coverage continue to seek an equitable solution so that more couples will have a chance to try IVF. This spring, insurance advocates may have inched a little closer when a 5-4 Supreme Court



is an extremely human, fundamental drive. It's nothing bizarre or quirky or strange. It's something we should support." Wolf, who is associate professor of law and medicine at the University of Minnesota Law School and a faculty member at the university's Center for Bioethics, believes there are moral grounds for supporting ART. You can make a case, she says, that infertility treatments are more justified than treatments related to risky behaviors, such as smoking or riding a motorcycle without wearing a helmet.

We're still left with the question of how to best fund these medical treatments. One solution has been the moneyback guarantee, offered by nearly one-fifth of U.S. infertility clinics, including Reproductive Health Associates in St. Paul. The American Medical Association opposes moneyback guarantees, saying fees shouldn't be tied to outcomes, but RHA's president, Theodore Nagel, M.D., defends it on the grounds that if medical treatment fails, couples still have enough money left to pursue adoption.

ruling called reproduction a "major life activity" under the Americans with Disabilities Act. The court ruled that when a person's inability to reproduce is limited, she or he meets the act's definition of disabled. Advocates say the ruling could provide the legal edge needed to win broader insurance coverage and time off from work for the treatments. (See Susan Wolf's related article, page 49.)

Ethicist Wolf agrees with the decision. "[Infertility] is a disability, and people have a right to help," she says. "The severe exclusion of reproductive treatments is wrong. It treats fertility as a luxury, and that's wrong."

RESOLVE's Hill believes that it's just a matter of time before couples find the support they need. "All the insurance companies are waiting to see what somebody else will do. Nobody wants to take the first step," she says. "But somebody needs to come up to bat. The reproductive technologies are not going away, nor are the demands for them."—MKF

staffed by fellowship-trained specialists with at least 10 years' experience. The success rates reflect that, ranging from a 40 percent to 50 percent chance of pregnancy per embryo transfer; in 1995, the average rate for U.S. clinics was 24.4. Minnesota's clinics are busy, too, which is important, because an IVF program must handle a high volume of patients to be proficient, Erickson explains. "All the programs in Minnesota have reached that volume."

Experts agree that another factor contributing to Minnesota's strong programs is good labs. When Corfman was asked to explain the reason behind his clinic's high pregnancy rates, he said: "It's in the lab."

"In IVF, the physician can do only so much," says Nagel. "If you have a crummy lab, you're not going to have a very good program."

Susan Wolf, associate professor of law and medicine at the University of Minnesota Law School, agrees.

discover that Minnesota is one of the few states where endocrinologists have a strong relationship with the local RESOLVE chapter—referring patients to the organization and getting involved in the group's symposiums and panels. "It really surprised me, pleasantly, how much we are doing in Minnesota," she says, in terms of providing advocacy for infertile couples.

The Regulation Controversy

As good as Minnesota's infertility clinics are, they are as unregulated here as anywhere else, which troubles medical watchdogs. Last spring, for example, the New York State Task Force on Life and the Law issued a 474-page report calling for tighter controls over many aspects of the fertility industry. Among other things, the report recommended legislation to ensure that couples seeking fertility treatment give proper informed consent; called for setting strict upper limits on the number of embryos



"When you go to an infertility program you get two things. One looks like normal doctoring; the other absolutely critical thing is a good lab. A lot of people will tell you that's the magic—the difference between a baby and no baby," says Wolf, who is also a member of the university's Center for Bioethics faculty and teaches a class on issues related to ART.

"I don't know about magic," says Diane Hammitt, Ph.D., lab director at Mayo Clinic Assisted Reproductive Technology. "We prefer to call it science." Hammitt, whose doctorate degree is in reproductive physiology, agrees that the lab, where fertilization takes place and the embryos incubate and grow during the first few stages of cell division, is an absolutely critical component of the IVF process. "If the laboratory conditions are not very precise, then of course there can be abnormal embryo development, and that will compromise the chances of pregnancy."

Sandra Bengtson, co-president of RESOLVE of the Twin Cities, describes Minnesota's infertility programs as progressive. At a national meeting, she was pleased to

that can be implanted; and said doctors should be required to tell women if procedures are experimental.

This last issue is of particular concern to Wolf, who is planning a project at the Center for Bioethics that will explore innovation in infertility treatment. She is concerned that treatments go into clinical use before they are fully tested. "When that happens, women and couples are guinea pigs," Wolf says. "Sometimes they're happy to be guinea pigs," she adds, "but it raises the issue of using unproven technologies on human subjects."

Wolf and others say the opportunity for this kind of potential abuse is related in part to abortion politics, which has kept the government from funding reproductive medicine, excluding it from government oversight. As a result, the human subjects protections that ordinarily govern federally funded research projects don't apply to reproductive medicine. Review by third-party payers is largely absent, too, since few insurers cover ART procedures.

Wolf concedes that the regulatory role has been filled by professional societies, such as the American Society

for Reproductive Medicine and the American College of Obstetricians and Gynecologists, which have issued their own guidelines. "It's true that there are professional guidelines," says Wolf. But, she adds, most are advisory. "No other area of medicine so heavily relies on professional norms."

Because it is uniquely unregulated, reproductive endocrinology has been called the "Wild West" of medicine. But its practitioners argue that it is sufficiently different from other medical treatment and, therefore, should be unregulated. Unlike other fields of medicine, where the endpoints are less clearly defined, ART has a specific result: a baby. "The biggest single distinguishing characteristic of infertility therapy is that there is a measured endpoint: pregnancy and delivery," says Corfman.

Corfman, who travels to Montana, the Dakotas, and Alaska to help couples who otherwise would have no access to a reproductive endocrinologist, says ART differs in another way, as well. "When I treat somebody with hypothyroidism, I know that if I give them the right dose, I'll have their thyroid correct. I know if I give 10 women with the same cause for infertility the same treatment, they won't all get pregnant. So there's more art to it than general medicine."

Erickson takes exception to the Wild West depiction. "Assisted reproductive technology is one of the most closely scrutinized subspecialties in medicine," she argues, citing the Clinical Laboratory Improvement Act of 1988, FTC regulation of ART advertising, and the Fertility Clinic Success Rate and Certification Act of 1992, which requires U.S. clinics to report their pregnancy success rates.

Jeffrey Kahn, Ph.D., director of the Center for Bioethics, says the industry is mostly self-regulated, which means it's up to clinics to decide on matters that perhaps ought to be regulated. One issue drawing attention from ethicists and others who argue for regulation is the number of embryos implanted during any one cycle. Kahn points out that laws in England, for example, limit the number to three.

"We don't have [such laws]," says Kahn. "It's whatever the clinics want to do and whatever the market will bear. It's a very entrepreneurial part of medical care because there's no third-party payment. The competition is among the clinics."

Bruce F. Campbell, M.D., IVF program director at Abbott Northwestern's Center for Reproductive Medicine, opposes setting a strict limit on the number of embryos implanted. He doesn't consider it a matter of competition—he sees it as individualized care for each patient, depending on medical history, embryo quality, and maternal age. "Regulations tell doctors how to

Resources

CDC Web Site

The Centers for Disease Control and Prevention makes available a report on the success rate of all infertility programs at: www.cdc.gov/nccdphp/drh/arts/index.htm

RESOLVE

This national infertility association provides education, support, and advocacy to infertile couples. 1310 Broadway
Somerville, MA 02144-1779
Phone: 617/623-1156 Fax: 617/623-0252
e-mail: resolveinc@aol.com
Web site: <http://www.resolve.org>

RESOLVE of the Twin Cities

Co-President Sandra Bengtson advises Minnesota physicians to give the local RESOLVE number to all patients beginning testing or treatment for infertility: 651/659-0333.

Minnesota Infertility Clinics:

Center for Reproductive Medicine and IVF Minnesota

Abbott Northwestern Hospital
2800 Chicago Avenue South, Third Floor
Minneapolis, MN 55407-1320
Phone: 612/863-5390 Fax: 612/863-2697

Mayo Clinic Assisted Reproductive Technology

200 First Street SW
Rochester, MN 55905-0002
Phone: 507/284-4520 Fax: 507/284-1774

Midwest Center for Reproductive Health

Oakdale Medical Building
3366 Oakdale Avenue North, Suite 550
Minneapolis, MN 55422-2998
Phone: 612/520-2600 Fax: 612/520-2606

Reproductive Health Associates

360 Sherman Street, Suite 350
St. Paul, MN 55102-2565
Phone: 612/222-8666 Fax: 612/222-8657

University of Minnesota Women's Health Clinic

(NOTE: This clinic provides fertility services but does not provide IVF.)
Department of OB/GYN
Box 395 UMHC
Minneapolis, MN 55455-0392
Phone: 612/626-3232 Fax: 612/626-0665

practice without considering the circumstances for each individual patient," Campbell says. "In addition, patients in the United States pay for IVF procedures themselves. Regulating the number of embryos to two or three may reduce the pregnancy rate, which is not fair to the patient."

When using donor oocytes, Campbell's clinic limits the number of embryos implanted to three, but when using a woman's own eggs, the clinic has no strict upper limit. Last year, for patients under age 40, the average number implanted was 3.2; for older patients, the average was 3.8. He says his clinic would rarely consider implanting more than 4 embryos; but if, for example, embryo growth was poor and an older woman wanted to have five poor-quality embryos implanted, he might consider it. The chances are slim that all the embryos would be viable, he says.

Campbell cites another argument against regulation. "So often in this field, improvements in technology outpace the speed at which legislation can be introduced and passed. As technology improves, a limit of three embryos may not be strict enough. But if the law limits the number to two, that may be too small a number for some older patients. By the time legislation is passed, it may be out of date."

But Kahn argues that being self-regulated "makes for uneven protections." And it places an undue burden on physicians. "[Physicians] shouldn't be out there on their own. It's not appropriate for us to say, 'You're the physician. You do what's best.' They shouldn't have to be left without any touchstone to society. It's unfair to them."

Although Corfman is generally leery of government regulation, he agrees that society might benefit from some guidelines to limit the number of embryos implanted per cycle. He points out that higher-order multiples increase the chance of preterm labor and premature babies, which exponentially increases the cost of delivery and care of the babies. "We want a high chance that our couples will take home healthy babies. Higher-order multiples compromise that chance," Corfman says.

"The tendency now is to increase the number of embryos implanted to compete nationally—to keep pregnancy rates high," he says.

Corfman's clinic, the Midwest Center for Reproductive Health, limits the number of embryos implanted to two for patients under 30 and three for patients 30 and over. "Under no circumstances do we want to implant more than three embryos. We don't want to put our patients in a position of considering fetal reduction or the danger of carrying four babies. When we made that choice, we thought it might lower our pregnancy rates,

but that didn't happen."

Nonetheless, he acknowledges that a strict limit on the number of embryos implanted could significantly lower pregnancy rates at many fertility clinics nationwide, which may not be fair to couples seeking treatment at these clinics.

Overall, Corfman does not believe regulation is necessary. "We run everything by our ethics board and institutional review board. Our boards have been very helpful," he says. "There are other reasons why having some regulations in place may have some advantages—for example, limiting the number of embryos. But whenever the government regulates, things don't always come out the way you intended it. Many of us are nervous, because [regulation] may compromise the overall care patients get."

So far, there are no signs that care is being compromised in Minnesota. Perhaps it's lab technique, physician expertise, and commitment mixed with a touch of magic, but whatever the factors, the fertility industry here is often succeeding when Mother Nature falls short.

The level of physician commitment is exemplified by Corfman's trips to Montana and North Dakota, to Duluth and Mankato. "It's not cost-effective," Corfman says of his travels, but he enjoys providing access to the specialized care and technology that he and his wife once sought.

The attraction for physicians is simple, says reproductive endocrinologist Lisa Erickson, "We love babies. It's so amazing to see the start of this whole process."

MM

Miriam Karmel Feldman is a free-lance writer living in Minneapolis and a frequent contributor to Minnesota Medicine.



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Jennifer Thistle

Minnesota middle-school students are learning firsthand about the dangers of the HIV/AIDS epidemic and its related risks. They carry messages such as these from class to class with vivid colors, pictures, and phrases printed on their school folders:

Respect each other. HIV won't discriminate. It affects men, women, young, old, rich, poor, straight, gay, lesbian, bisexual—any ethnic group—anyone. There is no known cure for AIDS, so be smart. Don't share needles for drugs, body piercing, tattooing, steroids, or bloodbrother rituals. No means no!

The Hennepin Medical Society Alliance (HMSA) began work on the folder project to create HIV/AIDS education and awareness in the Twin Cities west-metro area for students in grades six through nine. In 1997, more than 25,000 folders were distributed. This year the HMSA, in collaboration with its parent organization, the Minnesota Medical Association Alliance (MMAA), has expanded the project throughout Minnesota and is working to create a lesson plan that will achieve two of the state graduation requirements in the middle-school health standards. To date, more than 53,000 folders have been requested by Minnesota senior high and middle schools, teen clinics, and other service organizations.

“We believe education will make a difference in the lives of Minnesota youth as we work with schools to promote the HIV/AIDS folders,” says Dianne Fenyk, president of the MMAA. The MMAA, like the HMSA, is a volunteer organization composed of physician, res-

ident, and medical student spouses. The idea for the HIV/AIDS awareness folders was sparked by the Florida Medical Alliance's success with a similar project.

Reaching kids with AIDS prevention messages is essential, say HMSA and MMAA leaders. An overwhelming 612,078 HIV/AIDS cases in the United States were reported to the Centers for Disease Control and Prevention by June 1997. Of these, Minnesota claimed 3,095 cases. HIV/AIDS is the No. 2 killer of Americans aged 25 to 44 and the No. 6 killer of 15- to 24-year-old Americans. It costs about \$119,000 to care for one HIV-infected person from initial infection until his or her death from AIDS.

The HIV/AIDS awareness folder includes facts about the disease and lists hotline numbers kids can call when they're looking for answers. A Hopkins High School senior interested in graphic arts designed the eye-catching folder, which is intended to help prevent teen pregnan-

cy, chronic health problems associated with STDs, and AIDS.

According to members of the HMSA and MMAA, the project was a learning experience for them, too. Alliance members have become familiar with writing grants and contacting pharmaceutical companies and foundations around the state to request funding for the project. Despite the many avenues explored, funding has fallen short of the need. "Funding is hard to come by for an established project," says Fenyk. "We have only one-third of our monetary goal—we need another \$20,000."

More than 30 percent of the evaluations that were



included along with the folders were returned with favorable comments about the folders' impact.

"In my sex and drug education classes we used these folders extensively, and I thought they were excellent. I have been teaching in this area for several years and truly believe that more and more of our students are exposed to risky behaviors," wrote Jeri Coequyt, sex and drug educator, Hopkins West Junior High School. "This folder has been a really valuable teaching and learning tool, and it is wonderful to see the folders in use every day in our school."

One middle-school student wrote, "I think the folder is just right for our age group because a lot of people experiment around this age." Another said, "I think everyone should have a folder. It's appropriate for junior high. It's not like we don't know what the stuff on the folder is. Some people think if they hide things, they will go away, but it's not true."

The HIV/AIDS folder is intended to help kids make educated choices so they can develop and maintain active and healthy lives, says Diane Gayes, chair of the health promotion project. "The HMSA and MMAA members believe that it is OK to be optimistic, but there is no room for complacency; taking every precaution is the best defense."

MM

Jennifer Thistle is MMA outreach field representative.

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Recent Advances in Infertility Treatment

Donna R. Session, M.D., Diane G. Hammitt, Ph.D., Mark A. Damario, M.D., and Daniel A. Dumesic, M.D.

ABSTRACT

Infertility is defined as the inability to conceive after one year of regular coitus without contraception. Approximately 10% to 20% of childbearing-age couples are infertile in the United States. The demand for infertility investigations has increased dramatically in recent decades. The number of women using infertility services rose from 600,000 in 1968 to 1.35 million in 1988,¹ an increase due, in part, to improved technology and increased publicity that began in the early 1980s. By 1995, the numbers were about 2.7 million.² Recent advances in assisted reproductive technologies (ART) have provided greater possibilities for successful infertility treatment. Examples of new technologies include intracytoplasmic sperm injection, oocyte donation, and embryo cryopreservation.

The etiology of infertility is often multifactorial. It is important to regard infertility as a disorder of the couple; both partners must be evaluated. Pregnancy depends on complex physiology, anatomy, and immunologic factors. The male needs normal spermatogenesis, reproductive anatomy, and sexual function. The sperm must be able to traverse the cervix and uterus to the fallopian tube and fertilize the oocyte. The female needs to be ovulatory, have patent fallopian tubes, and an endometrium and functional corpus luteum to allow implantation and maintenance of a pregnancy. An abnormality in any of the above processes may result in infertility. A male factor is responsible for 35% of infertility in couples. In the female, ovulatory dysfunction occurs in 40%, uterine or tubal abnormality in 40%, and cervical factor in 5%. The prevalence of unexplained infertility is approximately 10%.³ The incidence of any single factor is difficult to estimate because this is often a multifactorial disorder and is population dependent.

PRECONCEPTUAL CONSIDERATIONS

Physicians should provide women patients with preconception counseling, including a discussion of the need for folic acid supplementation. Women with no family history of neural tube defects should ingest 400 µg of folate daily for six to eight weeks before conception; 4 mg orally per day is recommended if there is a familial incidence of neural tube defects. The immunologic status of the woman should be assessed and vaccinations should be performed if appropriate. The physician should also determine the couple's ethnicity and family history and do appropriate preconceptional screening for diseases

such as sickle cell anemia, thalassemias, cystic fibrosis, and Tay-Sachs disease. Assisted reproductive technologies (ART) make pre-embryo genetic diagnosis possible as an alternative to amniocentesis for several diseases, allowing for transfer of unaffected embryos.

MALE FACTOR INFERTILITY

Male factor infertility accounts for approximately 35% of infertility in couples. The semen analysis assesses the physical characteristics of the semen, sperm density, motility, and morphology. Since the cycle of sperm production lasts approximately 70 to 80 days, acute illness may adversely affect an isolated semen analysis. Abnormalities should be confirmed by repeat testing on two or more occasions. A substantial decrease in fertility has been associated with a sperm density less than 20 million/mL, yet 20% to 25% of proven fertile men have sperm densities lower than this.

Sperm morphology may be defined by the 1992 World Health Organization (WHO) criteria or by Kruger's strict criteria.^{4,5} Using strict criteria, men with greater than 14% normal forms have normal rates of fertilization, while men with less than 4% normal forms have fertilization rates of 7% to 8% and are candidates for intracytoplasmic sperm injection (ICSI). Intracytoplasmic sperm injection entails directly injecting sperm into oocytes.⁶ If abnormalities persist on repeat semen analysis, the man should be referred to a urologist.

Treatment options include insemination and, more recently, ICSI. Two types of intrauterine insemination (IUI) are available, based on the severity of the sperm defect. Homologous washed intrauterine insemination (AIH) uses sperm from the

husband or male partner. AIH has a fecundity (ability to achieve a live birth within one menstrual cycle) of 3% to 9%, with a cumulative probability of pregnancy approaching 30% after 12 months. At least 1 million sperm should be inseminated since lower numbers rarely result in pregnancy. Donor insemination (AID) relies on sperm donated from fertile men. The expected fecundity for AID is 12% to 18% per month, with a cumulative success rate approaching 70% after 12 cycles.

Assisted reproductive technologies have provided new opportunities for treating infertility in men with oligospermia and azospermia. Retrograde or electrostimulatory ejaculation as well as testicular aspiration/biopsy may provide sufficient sperm quantity for ART programs. Genetic abnormalities, particularly deletions of the Y chromosome, have been identified in men with azospermia and oligospermia. The use of ICSI has raised concerns that genetic abnormalities will be transmitted to male offspring conceived by ART—that sons of men with Y-chromosome defects may have the same fertility disorder as their fathers. However, only 5% to 15% of severely oligospermic or azospermic men appear to possess Y-chromosome defects.

OVULATORY DISORDERS

Ovulatory disorders account for approximately 15% of infertility in couples and 40% of female infertility. Regular menstrual cycles associated with premenstrual symptoms and dysmenorrhea indicate ovulation in more than 95% of women. As the oldest method of ovulation detection, the basal body temperature (BBT) is simple, noninvasive, and cost-effective; however, it is often unreliable and inconvenient. (Ovulation has been detected in 2% to 20% of monophasic BBTs.) On the other hand, urinary LH kits are noninvasive and convenient. The evening RIA urine LH kit predicts ovulation correctly in 98% of women. Many clinicians utilize a single serum progesterone on day 21 of the cycle to document ovulation, with serum levels less than 3 µg/mL consistent with follicular phase levels. A single serum

progesterone, however, is insufficient to determine adequacy of the luteal phase.

Clomiphene citrate (CC) is often used to correct ovulatory disturbances. Approximately 80% of women using CC will ovulate, and approximately 40% will conceive (monthly fecundity rate is approximately 12%). The risks of CC include multiple pregnancy, ovarian cysts, and possibly borderline (low malignant potential) ovarian tumors.⁷ Physicians should reassess therapy after three ovulatory cycles if no conception occurs since the pregnancy rate with additional cycles is low. Gonadotropins may be used to treat hypogonadotropic hypogonadism, hyperandrogenic anovulation, and unexplained infertility. A cumulative pregnancy rate of 90% may be achieved in hypogonadotropic hypogonadism after six cycles; however, normogonadotropic anovulation is associated with a 40% cumulative pregnancy rate. The new recombinant gonadotropins have less batch-to-batch variability and allow for subcutaneous injection.

In the last decade, epidemiologic studies have reported an association between gynecologic cancers and infertility. Several studies have found an increased relative risk of ovarian cancer, ranging from 1.8 to 10. A recently published study showed an increased risk of ovarian cancer associated with infertility treated with drugs.⁸ Since the interrelationships between ovarian cancer, infertility, and ovulation-inducing medications remain unclear, it seems prudent to limit the number of cycles of ovulation-inducing agents.

UTERINE, TUBAL, AND PERITONEAL FACTORS

Tubal and pelvic pathology may account for approximately 40% of infertility in women. Recent advances in ultrasound, such as contrast enhanced sonographic hysterosalpingography (sonohysterography), now provide an alternative to diagnostic hysteroscopy and x-ray hysterosalpingography (HSG) for evaluating uterine abnormalities.⁹ Sonohysterography is an office-based

procedure useful in evaluating patients with abnormal bleeding, infertility, and recurrent pregnancy loss. This procedure requires intrauterine instillation of a contrast agent via a transcervical catheter under sonographic visualization.

Laparoscopy currently represents the gold standard for the diagnosis of tubal disease, endometriosis, and adhesions. The majority of abnormalities can now be treated through the laparoscope, either by lysis of adhesions, salpingostomy, or fulguration of endometriosis. In one recent study, treatment of even mild peritoneal endometriosis was associated with improved pregnancy rates.¹⁰

Hysteroscopy is an excellent technique to delineate polyps, submucous myomas, and congenital uterine abnormalities. It is generally performed alone when an abnormality is detected on HSG, or combined with laparoscopy when indicated.

In vitro fertilization (IVF) is recommended in all but select cases of distal tubal obstruction. Assisted reproductive technologies have a higher success rate than surgery with lower risk of complications, particularly ectopic pregnancy. Recent evidence suggests that a hydrosalpinx may inhibit pregnancy by IVF.¹¹ The role of prophylactic salpingectomy is still being evaluated. Proximal obstruction accounts for approximately 15% of tubal disease. In most cases, the obstruction is caused by masses, adhesions, or spasm. Some physicians have attempted to cannulate the fallopian tube transvaginally under fluoroscopic, ultrasonographic, and hysteroscopic guidance. Reports have described tubal patency rates of approximately 90% and pregnancy rates of approximately 30% to 40%. Recently, this technique has been performed under ultrasound guidance using an ultrasound contrast agent.¹²

AGE

Advanced age is associated with declining fertility in women. Natural fertility rates are unknown because of the widespread use of contraception in today's society. A classic study of the Hutterites¹³ found that 11% of the women were infertile after age 34

years, 33% after age 40, and 87% after age 45. A major contributor to the age-related decline in delivery rates is a higher rate of miscarriage resulting from more euploid and aneuploid abortuses. Clinically recognized abortion occurs in 12% of women younger than 20 years but increases to 26% in women over 40.

Experience has demonstrated a decrease in pregnancy rates with IVF when the oocytes are obtained from women of advanced age, particularly those over age 40. Yet when oocytes from younger donors are transferred to older recipients, the pregnancy rates are similar to rates among younger patients.¹⁴ This suggests that the age-related decline in pregnancy is related to the age of the oocyte and not to uterine factors.

The changes with advancing paternal age are limited but significant. New autosomal disease can be attributed to greater frequency of male gene mutations in older males.

Shortly before the onset of meno-

pause, women experience shorter follicular phases and higher serum follicle-stimulating hormone (FSH) levels. The rising serum FSH levels reflect declining inhibin production by less competent ovarian follicles. At cycle day 3, a serum FSH level greater than 25 IU/L suggests poor pregnancy potential and an increased risk of miscarriage in IVF. Although the cycle day 3 serum FSH level varies from cycle to cycle, the chance of pregnancy is poor if any serum FSH value is elevated. The significance of an elevated serum FSH level apart from ART has not been widely studied, but probably also predicts poor pregnancy outcome. An elevated cycle day 3 serum estradiol (E2) level probably reflects the ovarian response to serum FSH levels and also is a predictor of pregnancy potential.

The clomiphene challenge test also assesses ovarian reserve. Clomiphene citrate is administered in a dose of 100 mg/day on days 5 to 9 of the cycle. Serum FSH and E2 levels

are tested on cycle days 3 and 10. A serum FSH greater than 25 on either day 3 or day 10 indicates poor pregnancy potential. It is important to consider laboratory variability and set internal lab standards. Testing should be considered in women older than 30 and is encouraged after age 35. An elevated cycle day 3 serum FSH level and maternal age are independent predictors of pregnancy outcome.

Physicians should evaluate older women expediently, paying careful attention to ovarian reserve. They should advise women of the rates of pregnancy and miscarriage as well as the risk of chromosomal aneuploidy associated with aging oocytes. Regardless of age, women with an elevated day 3 serum FSH level or abnormal clomiphene citrate challenge test should consider donor oocytes. The pregnancy rate can approach 50% for older women who use donor oocytes.

continued

Assisted Reproductive Technology Glossary

AH—assisted hatching: A small defect is created on the oocyte's zona pellucida to improve hatching.

AID—artificial insemination donor: Injection of washed sperm from a donor into the cervix or uterus.

AIH—artificial insemination husband: Injection of washed sperm from the woman's partner into the cervix or uterus.

AOD—anonymous oocyte donation: Eggs are retrieved from an anonymous donor. Embryos are transferred to an infertile recipient.

ET—embryo transfer: Transfer of embryos resulting from IVF into the uterus.

FSH—follicle-stimulating hormone: Hormone that stimulates the recruitment of follicles (oocytes) within the ovaries.

GIFT—gamete intrafallopian transfer: The oocytes are retrieved via laparoscopy (a major surgical procedure) and returned to the tubes with sperm.

GnRH—gonadotropin releasing hormone.

hCG—human chorionic gonadotropins: Used to trigger ovulation due to its similarity to luteinizing hormone.

HMG—human menopausal gonadotropins: Drug containing FSH or FSH and LH used to induce ovulation.

ICSI—intracytoplasmic sperm injection: Injection of a single sperm into the nucleus of an oocyte to enhance fertilization.

IUI—intrauterine insemination: Injection of washed sperm through the cervix directly into the uterus.

IVF—in vitro fertilization. Eggs are retrieved under ultrasound guidance with a needle and are fertilized in the laboratory. The resulting embryos are transferred to the woman's uterus.

LH—luteinizing hormone: Hormone that causes the maturation and release of the oocyte.

MESA—microsurgical epididymal sperm aspiration: Surgical removal of sperm from the epididymis.

TESA—testicular epididymal sperm aspiration: Surgical removal of sperm from the testis.

ZIFT—zygote intrafallopian transfer: Transfer of zygotes to the fallopian tube. Zygotes are at the pronuclear stage of development, which occurs approximately the day after fertilization.

Table

Ongoing pregnancy rates (OPR) per embryo transfer (ET) and cryoaugmented OPR when only those embryos required for transfer are retained in culture and the remainder are frozen at the one-cell stage¹⁵

Age	No. retrievals	No. fresh transfers (OPR/ET)	No. frozen transfers (OPR/ET)	Cryoaugmented OPR
<35 years	157	144 (69/144 = 47.9%)	68 (30/68 = 44.1%)	63.1%
35-39 years	76	74 (40/74 = 54.1%)	21 (7/21 = 33.3%)	61.8%
>39 years	29	27 (8/27 = 29.6%)	9 (2/9 = 22.2%)	34.5%
All ages	262	245 (117/245 = 47.8%)	98 (39/98 = 39.8%)	59.5%

ADVANCES IN ASSISTED REPRODUCTIVE TECHNOLOGY

In addition to the advances in micro-manipulation, such as ICSI, recent developments in ART include improved culture techniques. IVF laboratories traditionally culture embryos by inseminating oocytes on the day of retrieval, checking for fertilization the day following retrieval, retaining most or all of the embryos in culture, and then transferring the best-quality embryos one or two days later. Any remaining good-quality embryos are cryopreserved following transfer at the two- to eight-cell stages.

Mayo IVF Laboratories has developed alternative embryo culture strategies to increase the cumulative or cryoaugmented pregnancy rate per retrieval. To maximize pregnancy rates in women who are undergoing their first, second, or third IVF cycle and are under age 40, we leave only the number of embryos required for transfer in culture in the two- to eight-cell stage. All extra embryos are cryopreserved at the one-cell pronuclear stage immediately following the fertilization check. The one-cell embryo survives freezing and thawing at much higher rates than the two- to eight-cell embryo, providing higher pregnancy rates per frozen embryo transfer cycle and maximizing the pregnancy potential per egg retrieval cycle. The table shows Mayo's cryoaugmented pregnancy rates for women <35, 35 to 39, and >39 years of age using this approach.¹⁵ The cryoaugmented pregnancy rate

was 62.7% in women <40 years.

For women >39 years, the pregnancy rate using fresh embryos was 29.6%, the pregnancy rate using frozen embryos was 22.2%, and the cryoaugmented rate was 34.5%. The pregnancy rates in women >39 years were considerably lower than the rates in women ≤39 years. Because of this, we adopted alternate embryo culture strategies in an attempt to increase the pregnancy rate in this patient population and in patients <40 years who had failed three or more IVF cycles. Since a high percentage of embryos from these types of patients possess chromosomal abnormalities, extended culture of the embryos may be useful to select chromosomally normal embryos for transfer to the patient's uterus. Embryos with chromosomal abnormalities often stop dividing during the transition from the maternal to embryonic genome (four- to eight-cell stage). Therefore, patients with a poor prognosis may benefit from culture of all embryos to day 3, followed by selection of the best-quality embryos for transfer.

Another more recent approach is to culture the embryos for five or six days to the blastocyst stage.¹⁶ The introduction of new sequential IVF culture media that more closely replicate the in vivo milieu of the fallopian tube and uterus have made it possible to successfully culture a high percentage of embryos through day 6 to the blastocyst stage, which consists of approximately 100 cells. Embryos with no implantation potential usually do not develop to the blastocyst stage in vitro. This meth-

od can be used with poor-prognosis patients to select the few embryos from the cohort that are chromosomally normal and have a high chance of producing an ongoing pregnancy.

Another strategy recently developed to increase pregnancy rates in poor-prognosis patients is embryo coculture, the use of feeder cells to assist the embryo's development. In IVF, various cell types have been used to try to improve embryo quality, implantation potential, and the chance of pregnancy. Although the results of studies to date are not entirely conclusive, most studies have shown a beneficial effect.¹⁷ Coculture is thought to improve embryo quality because feeder cells secrete growth factors or steroids and/or remove toxic substances from the embryo's in vitro culture environment. The primary concern with embryo coculture is the possibility of transmitting disease to the embryo and mother from microorganisms that may be present in the feeder cells. The ideal cell type for coculture is derived from the mother.

The Mayo IVF Laboratories has developed a new system that uses the patient's own cumulus cells for embryo coculture. Normally, each mature oocyte is surrounded by a large number of cumulus cells. A few of these cells are removed from several mature oocytes and processed in the laboratory to establish a layer of feeder cells for the early embryo.

Embryo coculture is particularly useful for poor-prognosis patients and is often used in conjunction with

assisted hatching (AH). The AH technique involves making a small hole in the outer noncellular coat of the embryo, the zona pellucida, to assist the hatching process—a prerequisite to implantation. Poorer-quality embryos may not secrete sufficient enzymes to completely digest a hole in the zona pellucida or may not develop to the appropriate cell stage in time to hatch and implant within the endometrial implantation window. AH has been shown in several studies to improve the implantation potential of poorer-quality embryos.

TREATMENT AND SUCCESS RATES

With the implementation of the 1992 Fertility Clinic Success Rate and Certification Act requiring the Centers for Disease Control and Prevention (CDC) to publish pregnancy success rates for fertility clinics, consumers now have access to the pregnancy rates of 281 IVF centers nationally. The 1995 Assisted Reproductive Technology success rates report, co-authored by the CDC, the American Society for Reproductive Medicine, and RESOLVE (a large, national consumer organization that aids infertile couples), is the first to be issued under this law and provides a national summary of these IVF centers. Undoubtedly, many people considering IVF will use this report to find the "best" clinic; however, a comparison of clinic success rates can be misleading because 1) rates for 1995 are reported in various ways, are difficult to interpret, and may not reflect the most recent years; 2) no reported success rate is absolute because of statistical margins of error; and 3) some clinics may see more patients with difficult problems.


SUMMARY

Infertility affects a large proportion of couples in their reproductive years. Ovarian age is a fundamental factor that has only recently gained emphasis. The workup should be individualized and expedient, allowing adequate time for conception after therapy. Because of the potential risk of ovarian cancer from fertility drugs, the number of therapy cycles

should be limited. The introduction of ICSI for severe male factor infertility and oocyte donation for diminished ovarian reserve are two recent advances in ART. Recognizing the benefits of advanced reproductive technologies is an important aspect

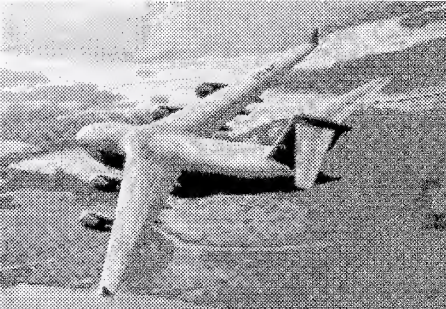
of caring for couples with reproductive disorders. MM

Donna Session and Mark Damario are assistant professors and Diane Hammitt and Daniel Dumesic are associate professors in the Division



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ANNOUNCEMENTS



Smith, Bauer Are New Leadership Scholars

Two MMA physicians, Cindy Firkins Smith, M.D., and Brent Bauer, M.D., have been appointed 1998 American Medical Association/Glaxo Wellcome New Leadership Development Scholars. Smith is a Willmar dermatologist; Bauer is a Rochester internist. They were chosen by a selection committee consisting of two representatives from the AMA Board of Trustees and one representative of the AMA Young Physicians Section.

Smith and Bauer will attend the Harvard School of Public Health Program for Health Care Negotiation and Conflict Resolution in Chicago on October 25 and 26. The program will focus on leadership, negotiation, and problem-solving skills that participants can use "to help empower physicians and organized medicine in an increasingly complex and challenging environment."

Push to End Provider Tax Gains Momentum

One of the Minnesota Medical Association's top legislative goals—repeal of the 1.5 percent provider tax—appears to have its best chance of passage next session. Support for eliminating the tax has been growing at the Capitol, where 21 DFL members of the House recently announced their proposal to replace the \$150 million the tax raises for MinnesotaCare with funds from the state's tobacco settlement.

In calling for repeal of the tax, Rep. Thomas Huntley, DFL-Duluth, cited Department of Revenue findings that the tax is even more regressive than the general sales tax. While the 10 percent of Minnesotans with the highest income earn 37 percent of total income but pay only 18.7 percent of the tax, the 10 percent of Minnesotans with the lowest income earn only 1.1 percent of total income but pay 2.6 percent of the provider tax.

And in mid-September, Republican gubernatorial candidate Norm Coleman unveiled his proposed budget, which calls for a three-year "phase-out" of the tax for all payers except hospitals and drug manufacturers.

David Renner, MMA director of state and federal legislation, said that while Coleman's proposal is not as strong as the health care community would like, he was pleased to see at least one candidate in the governor's race

considering the matter. "It's a good starting point, although it doesn't go far enough," Renner said. Coleman received the endorsement of MEDPAC, the political action committee of the MMA, several months ago; one key factor in the PAC board's decision was Coleman's stated opposition to the provider tax.

DFL gubernatorial candidate Skip Humphrey has not taken a position on repeal of the provider tax. The only DFLer running for governor who promised to end the tax was Sen. Doug

Johnson of Tower, who—along with three other candidates—was defeated by Humphrey in the primary.

At the DFL lawmakers' news conference, Huntley reminded his audience that although the Legislature originally set out to fund MinnesotaCare with a broad-based tax, the provider tax was the only tax Gov. Carlson would approve.

"The tobacco settlement is meant to reimburse state taxpayers for the additional costs of health care caused by the actions of cigarette makers," Huntley said. "Let's give it back to them by eliminating an unfair, complicated, and regressive tax." Rep. Mindy Greiling, DFL-Roseville, pointed out that the tobacco settlement—while permitting generous spending for cessation and education—also offers enough funding to



Tax cont. on page 34

MEDPAC Continues Endorsement Process

The MEDPAC board has endorsed several candidates for state legislative and congressional offices. As *News & Views* goes to press, the board had endorsed the following candidates for the Minnesota House of Representatives:

Bernie Lieder, DFL-Crookston, in District 2A; Gail Skare, DFL-Bemidji, in District 4A; Larry Howes, R-Hackensack, in District 4B; David J. Tomassoni, DFL-Chislm, in District 5B; Thomas Huntley, DFL-Duluth, in District 6B; Mary Murphy, DFL-Hermantown, in District 8A; Bill Hilty, DFL-Finlayson, in District 8B; Kevin Goodno, R-Moorhead, in District 9A; Bud Nornes, R-Fergus Falls, in District 10A; George Cassell, R-Alexandria, in District 10B; Roxann Daggett, R-Frazee, in District 11A; Mary Ellen Otremba, DFL-Long Prairie, in District 11B; Al Juhnke, DFL-Willmar, in District 15A; Gary Kubly, DFL-Granite Falls, in District 15B; Joe Opatz, DFL-St. Cloud, in District 16A; Jim Knoblauch, R-St. Cloud, in District 16B; Robert Ness, R-Hutchinson, in District 20A; Richard Mulder, R-Ivanhoe, in District 21B; Ted Winter, DFL-Fulda, in District 22A; James Clark, R-Springfield, in District 23A; John Dorn, DFL-Mankato, in District 24A; Henry Kalis, DFL-Wells, in District 26B; Steve Sviggum, DFL-Kenyon, in District 28B; Fran Bradley, R-Rochester, in District 30A; Dave Bishop, R-Rochester, in District 30B; Gregory Davids, R-Preston, in District 31B; Gene Pelowski, DFL-Winona, in District 32A; Chris Gerlach, R-Apple Valley, in District 36A; Dan McElroy, R-Burnsville, in District 36B; Mary Liz Holberg, R-Lakeville, in District 37B; Tim Pawlenty, R-Eagan, in District 38B; Thomas Pugh, DFL-South St. Paul, in District 39A; Dan Larson, DFL-Bloomington, in District 40A; Ron

Erhardt, R-Edina, in District 42A; Erik Paulsen, R-Eden Prairie, in District 42B; Barb Sykora, R-Excelsior, in District 43B; Jim Rhodes, R-St. Louis Park, in District 44B; Ron Abrams, R-Minnetonka, in District 45A; Peggy Leppink, R-Golden Valley, in District 45B; Ann Rest, DFL-New Hope, in District 46A; Darlene Luther, DFL-Brooklyn Park, in District 47A; Phil Carruthers, DFL-Brooklyn Center, in District 47B; Bill Haas, R-Champlin, in District 48A; Luanne Koskinen, DFL-Coon Rapids, in District 49B; Kathy Tingelstad, R-Andover, in District 50B; Mike Delmont, DFL-Blaine, in District 51A; Satveer Chaudhary, DFL-Fridley, in District 52A; Geri Evans, DFL-New Brighton, in District 52B; Philip Krinkie, R-Shoreview, in District 53A; Sherry Broecker, R-Vadnais Heights, in District 53B; Mindy Greiling, DFL-Roseville, in District 54B; Harry Mares, R-White Bear Lake, in District 55A; Betty McCollum, DFL-North St. Paul, in District 55B; Nora Slawik, DFL-Maplewood, in District 57A; Len Biernat, DFL-Minneapolis, in District 59A; Phyllis Kahn, DFL-Minneapolis, in District 59B; Margaret Anderson Kelliher, DFL-Minneapolis, in District 60A; Myron Orfield, DFL-Minneapolis, in District 60B; Linda Wecjman, DFL-Minneapolis, in District 61B; Lee Greenfield, DFL-Minneapolis, in District 62A; Wes Skoglund, DFL-Minneapolis, in District 62B; Mark Gleason, DFL-Richfield, in District 63B; Matt Entenza, DFL-St. Paul, in District 64A; Andy Dawkins, DFL-St. Paul, in District 65A; Carlos Mariani, DFL-St. Paul, in District 65B; and Alice Hausman, DFL-St. Paul, in District 66B.

Mulder is a physician, and three other candidates—Leppink, Abrams, and Gleason—are doctors' spouses.

The board also has recommend-

ed that AMPAC, the political action committee of the American Medical Association, endorse the following candidates in five of Minnesota's eight Congressional races: Gil Gutknecht, R, First District; David Minge, DFL, Second District; Jim Ramstad, R, Third District; Martin Olav Sabo, DFL, Fifth District; and Collin Peterson, DFL, Seventh District.

The MEDPAC board announced in late May that it is endorsing St. Paul Mayor Norm Coleman in the gubernatorial race. The board has not endorsed a candidate in the race for Minnesota attorney general, but is expected to make a selection at its October meeting.

Watch your mailbox mid-month for the MEDPAC voters' guide. ■

Tax cont. from page 33

"more than double expected MinnesotaCare expenditures through 2003."

The issue began to pick up steam last session when, thanks in large part to MMA advocacy, an amendment to the House tax bill proposing to raise the tobacco tax 40 cents per pack and eliminate the provider tax garnered significant support. Although the measure ultimately failed on the House floor, the fact that it was even debated represented progress for the health care community.

Linda Carroll-Shern, MMA associate director of state legislation, stressed the importance of physician involvement in the effort. "An opportunity like the one we have with this tobacco settlement comes along once in a lifetime," she said. "This is the year we really need to move. It's going to be essential for physicians to make sure they're heard by their legislators over the next several months." ■

BMP: School Sports Physicals Require Practice of Medicine

The state Board of Medical Practice has asserted that the activity necessary to perform school sports physicals constitutes the practice of medicine, and is sending a letter detailing its opinion to the Minnesota State High School League.

The board also is asking the MSHSL to study the various components of the exam and evaluate the education and expertise levels necessary to complete them.

The Minnesota Medical Association and the Minnesota Academy of Family Physicians had asked the board to speak out firmly on the matter. Last month the board's public policy committee recommended that the board convey to the Minnesota State High School League that performance of the exams does, in fact, constitute the practice of medicine.

The high school sports qualifying physical includes a comprehensive medical history section and requires assessment of a wide range of systems including lymph nodes, thyroid, lungs, and heart. Equally important are the return-to-sports ex-

ams and the wrestling skin condition examinations that require the ability to diagnose infectious skin conditions.

At the meeting, board member Barbara Letourneau, M.D., asked Larry Spicer, D.C., executive director of the Minnesota Board of Chiropractic Examiners (BCG), whether he believes chiropractors are qualified to diagnose and treat conditions like asthma and pediatric cardiac abnormalities, two conditions these physicals are designed to detect. Spicer responded that the BMP meeting was not the right forum in which to answer that question and he was not prepared to respond.

The MSHSL had been unable to decide whether chiropractors are qualified to perform these physicals and had requested input from both the BMP and the BCE. League officials specifically requested that the BMP provide an opinion on whether these physicals constitute the practice of medicine, and who, other than physicians, is qualified to perform them. ■

Hepatitis C Program Is October 29

A half-day conference on the emerging public health threat of hepatitis C is scheduled for October 29 in Bloomington. Physicians and other health professionals interested in screening, testing, and counseling people at risk for hepatitis C are invited to attend the program, sponsored by the Minnesota Hepatitis C Coalition. The Minnesota Medical Association is a member of the coalition, which was formed in 1997 to alert people about the risk factors associated with the disease and to disseminate information about what treatment options exist.

The conference will take place

from 8 a.m. to 2 p.m. at the Doubletree Hotel near the Mall of America. Concurrent sessions will be offered to physicians and nurses. Participants will learn to discuss the epidemiology and natural history of hepatitis C, interpret serological and lab tests to diagnose and evaluate patients with hepatitis C, describe management and treatment options for the disease, help at-risk clients establish a risk-reduction plan to protect themselves from hepatitis C, understand effective methods to counsel infected patients, and recognize how cultural issues may affect patient care. ■

Informational Materials Available on Ischemic Stroke

The Health Technology Advisory Committee (HTAC) has published a question-and-answer brief on ischemic stroke (brain attack) and another on its treatment.

Both are intended for a primary care physician audience, and the more general brief is also appropriate for patients. It includes answers to questions such as: What is an ischemic stroke or brain attack? How common is brain attack? What are the symptoms of brain attack? The brochure on treatment of ischemic stroke addresses questions such as: How is tissue plasminogen activator (t-PA) used to treat brain attack?

HTAC is an independent body of volunteers that evaluates new and existing health technologies. The committee considers safety, clinical effectiveness, health outcomes, and expense to determine whether benefits to patients and society outweigh risks and costs of a given technology. HTAC reports its findings to the bipartisan Legislative Oversight Commission on Health Care Access and works in conjunction with the state commissioner of health and the Department of Health.

If you would like to receive copies of the new materials on ischemic stroke, contact Mary Stadick at HTAC at 651/282-6355. ■

Plan to Attend Child Health Month Event at Mall of America

The Minnesota Medical Association is participating in the Child Health Month Family Fun Night in the Mall of America rotunda from 5 p.m. to 7 p.m. on October 27.

A highlight of the evening will be a performance of the play "2 Smart 2 Smoke" by the National Theatre for Children. This play gives children the clear message that smoking is uncool and sends them off chanting the refrain, "Too smart to smoke!" The MMA and the Smoke-Free Coalition, together with many component medical societies, specialty societies, and clinics helped bring this exciting production to schools throughout Greater Minnesota in the spring.

Also featured will be a program by Teenage Medical Services (TAMS).

Teenage peer educators will present skits on substance abuse and engage the audience in a lively discussion.

Rap music with an antiviolenence and anti-substance abuse message will be provided by the teenage rap group No Time for Crime. Prize drawings also are planned.

The MMA, which helped organize the event, will have a display booth in the mall rotunda. The MMA is part of the Child Health Month Coalition, a group of area nonprofit organizations that come together each year to promote children's health during the month of October. The coalition is convened by the United Way and chaired by Marjorie Hogan, M.D., a pediatrician at Hennepin County Medical Center.

National Child Health Month is sponsored each October by the American Academy of Pediatrics, which set substance abuse prevention as this year's focus.

In addition to Family Fun Night at the mall, the coalition has set up a wall display at Hennepin County Government Center in downtown Minneapolis. The group also will sponsor a presentation by David Walsh, Ph.D., and Attorney General Hubert "Skip" Humphrey for students and parents at South High School in Minneapolis on October 6. The subject of Walsh's talk is "Smoke and Mirrors: Curriculum on Tobacco and the Media." Walsh has served as an MMA spokesperson on the harmful effects of violence in the media.

Many health care organizations will also sponsor their own individual Child Health Month events throughout the month. ■

MMA Completing Member Poll on Health Plan Liability

Minnesota Medical Association staff were collecting results of the member survey on health plan liability as *News & Views* went to press. About 30 percent of the roughly 1,200 members surveyed had responded by September 22; staff planned to collect responses until September 24.

The survey, administered via e-mail, consists of four questions:

1. How many years have you been in practice?

2. Do you believe that "medically necessary" determinations made by health plans are the practice of medicine? (Yes or No)

3. If you answered "yes" to question number 2, what is the best method for holding health plans accountable for medical decisions? (Check only one)

• No changes needed; accountability already exists;

• Require the health plan to be subject to an expedited, independent, external appeals process;

• Require health plan medical directors to be licensed by, and subject to disciplinary action by, the Board of Medical Practice;

• Subject the health plan to medical malpractice lawsuits; and

• Other.

4. There is growing debate among policymakers about whether health plans making determinations of medical necessity are engaged in the practice of medicine and therefore should be subject to medical malpractice suits. The debate includes analysis of the potential impact of health plan liability legislation on the health care system. Do

you believe that allowing patients to sue health plans for medical malpractice will increase, decrease, or have no effect on the following (please pick only one response per issue):

• The quality of care for patients;

• The number of health plan denials;

• The number of lawsuits against health plans;

• The number of lawsuits against physicians;

• Overall health care costs;

• Health plan involvement in clinical decision-making; and

• The number of employers offering coverage.

Any member who was not among the 1,200 surveyed but wishes to comment is encouraged to call the MMA's Center for Physician Advocacy Hotline at 888/662-6774. Members may also e-mail Rochelle Koski of the Center for Physician Advocacy at rkoski@mnmed.org ■

NEWS DIGEST

*People and places
making medical news*



People & Places

Craig Svendsen, M.D., has been named interim medical director at **Woodwinds Health Campus** in Woodbury. Svendsen is currently medical director at **HealthEast St. John's Hospital** in Maplewood and practices at **HealthEast Clinics East Side Medical Center** in Oakdale. He will help develop the medical staff at Woodwinds, which is a joint endeavor between HealthEast and **Children's Health Care**.

HealthSystem Minnesota announced a management restructuring that pairs a physician and an administrator to lead care operations. **William S. Shimp, M.D.**, appointed executive vice president and chief medical officer, fills the lead physician role. **John Herman**, as executive vice president and chief administrative officer, is the team's administrator. Shimp, a medical oncologist, joined **Park Nicollet Clinic** as an internist in 1976 and since 1996 has served as senior vice president, hospital and consultative services, for **HealthSystem Minnesota**. Herman earned a master's degree in health care administration at the University of Minnesota in 1980 and joined **Methodist Hospital** as vice president in 1982. He was appointed senior vice president, clinic administration, in 1997.

Following designation as a National Cancer Institute Cancer Center in May, the **University of Minne-**

sota Cancer Center has been further distinguished as a Comprehensive Cancer Center. Comprehensive centers have research programs in basic, clinical, prevention, control, and population studies; exhibit a strong body of interactive research; and conduct activities in outreach, education, and information. Only 35 of the 58 NCI-designated Cancer Centers meet the requirements for the "comprehensive" label. The University of Minnesota has the only Comprehensive Cancer Center in the state.

The **University of Minnesota** has joined three other Midwestern universities to form a joint research center to investigate ways of treating and preventing AIDS. Funded by the **National Institutes of Health**, the group, called the **Great Lakes Center for AIDS Research**, includes investigators from **Northwestern University**, the **University of Wisconsin-Madison**, and the **University of Michigan-Ann Arbor**, in addition to the University of Minnesota. They will receive between \$6 million and \$7 million over the next five years to work together on a wide range of research projects aimed at finding better treatments and vaccines for the deadly disease.

"This center provides a new opportunity for patients to participate in groundbreaking research that will advance our understanding of how HIV works in the human body and

provide new possibilities for therapy," said **Tim Schacker, M.D.**, assistant professor of medicine at the University of Minnesota and co-investigator at the center with **Ashley Haase, M.D.**, head of the microbiology department.

Spurred by increasing numbers of patients and a shortage of space, **St. Paul's United Hospital** announced plans to build a \$19 million heart center. The high-tech center will occupy the existing cardiology space on the hospital's third floor as well as a 23,000-square-foot addition that will connect it to the **St. Paul Heart Clinic**. The new center will integrate all cardiology services in one place, including surgery, other forms of treatment and diagnosis, and rehabilitation and prevention services.

HealthEast St. John's Hospital has completed construction of a new, \$3 million emergency facility. The Emergency Care Center began receiving patients on September 9. At 18,000 square feet, the new center is more than four times larger than the hospital's former emergency room, which could no longer handle the growing patient volume. The emergency care center is the first phase of St. John's \$50 million expansion, which will include a new medical office building, chapel, ambulatory care center, and surgery facilities. ➡



Socioeconomics

Minnesota Will Pay for Viagra for Medicaid Patients

On September 21, Minnesota began paying for Viagra for patients covered by the state's Medicaid program. The decision by Human Services Commissioner David Doth came two months after the federal government issued a directive requiring all states to cover the impotence drug under Medicaid.

But Minnesota will not pay for Viagra for men in two other state health programs, MinnesotaCare and General Assistance Medical Care, until next April, Doth said. He postponed action on these programs, which are not subject to the federal mandate, to give the legislature time to investigate the drug, which costs \$7 a pill. MinnesotaCare and General Assistance together cover about 134,000 people.

"We recognize there is significant controversy surrounding Viagra's use and safety, particularly in light of recent reports of deaths related to the drug," Doth said in a Twin Cities-based *Star Tribune* article. Sixty-nine deaths among Viagra users, many from heart attacks, have been reported, although there's no evidence that Viagra caused the deaths.

The state will limit Medicaid coverage for Viagra to six pills a month and only offer it to men who have a medical diagnosis linked to impotence and are not taking nitrates.

Employers Association to Buy Health Care Directly

The Twin Cities-based Employers Association (EA), a coalition of small and medium-sized businesses, said it

will buy health care services directly from physicians and hospitals. The EA had offered its more than 250 member companies a health plan through Medica, but the company decided not to renew the contract.

The EA is taking advantage of a new state law that allows employers to buy health care directly from cooperatives of hospitals and physicians. Community Coordinated Healthcare, a Bloomington physician group, filed an application with the state to provide health care for EA. If the application is approved, the group will become the first health care group to act like an HMO.

United HealthCare Begins First Round of Layoffs

United HealthCare Corp. identified 1,200 jobs that would be eliminated in the company's health plans across the country. The layoffs are the first of nearly 4,000 job cuts that are part of a companywide restructuring announced in July. Like other managed care firms, Minnetonka-based United HealthCare has seen

profits squeezed by higher health care costs.

Only 50 of the current job eliminations will apply to United's Minnesota work force, a United spokesperson told the *Star Tribune*. Most of the layoffs will affect workers at health plans in 44 markets, including Chicago and Milwaukee.

United also plans to consolidate operations and information systems and withdraw from some markets.

Antismoking Group to Get \$202 Million in Tobacco Funds

A new foundation, the Minnesota Partnership for Action Against Tobacco, will receive \$202 million of Minnesota's \$6.1 billion tobacco settlement, a Ramsey County district judge ordered. In a plan submitted by Attorney General Hubert Humphrey III, the foundation proposed to use the money for smoking cessation programs and tobacco control research. The group will be led initially by former U.S. Surgeon General C. Everett Koop, M.D., and David Kessler, M.D., former director of the U.S. Food and Drug Administration. ■



Rates, Trends & Data

Teen Marijuana Use Increasing

In 1997, 11.4 percent of young people aged 12 to 17 reported using some illicit drug within the last month, compared with 9 percent in 1996, according to a government survey. The drug of choice was marijuana, with 9.4 percent using it in 1997, compared with 7.1 percent who used it in 1996.

Marijuana is popular because many young people don't see it as dangerous, said Health and Human Services Secretary Donna Shalala. She traced that attitude to parents who transmit the message that marijuana is OK. The annual National Household Survey on Drug Abuse was conducted throughout 1997 by interviews with 24,500 people.

Despite the increase in teen drug use, the overall use of illegal drugs in the United States remained steady last year. An estimated 14 million people, or 6.4 percent of the population age 12 and older, used drugs last year.



Research & Innovations

Researchers Find Tobacco Byproducts in Newborns' Urine

A new study offers what researchers say is the first direct evidence that fetuses of women who smoke metabolize cancer-causing agents contained in tobacco. Researchers, led by Stephen Hecht, Ph.D., of the University of Minnesota Cancer Center, examined the first urine samples collected from 48 newborns of smokers and nonsmokers in Germany. They found traces of the nicotine-derived chemical NNK, one of the strongest cancer-causing agents in tobacco products, in 22 of the 31 babies whose mothers smoked during pregnancy.

The evidence suggests an unacceptable risk to unborn children, said Hecht in a Twin Cities-based *Star Tribune* article. "The message

is clear. Don't smoke when you're pregnant."

Hecht said NNK was transmitted to the fetus through the bloodstream. Previous studies have shown a relationship between NNK and lung cancer in humans. Hecht said more research is needed to determine the likelihood that the NNK will lead to cancer later in the babies' lives.

Hecht presented his findings at the American Chemical Society National Meeting in Boston in August.

Researchers Find Contaminant in Popular Dietary Supplement

Physicians at the Mayo Clinic found a chemical contaminant in samples of six brands of the popular dietary supplement 5-hydroxy-L-tryptophan (5-HTP), raising concerns about the products' safety. The supplement, a form of tryptophan sold in pill form in health food stores to alleviate insomnia, obesity, depression, and other problems, contained a chemical, known as "peak X," similar to one previously linked to a life-

threatening disorder, researchers said.

Although there are no reports of anyone becoming ill from 5-HTP, researchers are advising consumers to stop taking the supplement and urging manufacturers to remove the contaminant from their products. The contaminant is similar to one found in tainted batches of a related dietary supplement, L-tryptophan, which killed more than 30 people and sickened hundreds in 1989. That contaminant was linked to the blood disorder eosinophilia-myalgia syndrome (EMS).

Symptoms of EMS include fatigue, muscle aches, soreness, numbness, tingling, and other nerve problems. Gerald Gleich, M.D., one of the researchers, said that anyone who has been taking the supplement and is experiencing those symptoms should call a physician and have a blood test.

Gleich and his Mayo colleague, Stephen Naylor, Ph.D., published their findings in the September 1 *Nature Medicine*. ➡

HMO Trend Report Shows Declining Profitability

The new *InterStudy HMO Trend Report* examines the declining profitability of HMOs since 1994. In the past three years, dramatic enrollment growth has not corresponded to a parallel rise in revenue. Only recently has revenue increased at the same pace as HMO medical costs. In 1994, nearly 90 percent of all HMOs were profitable; by the fourth quarter of 1997, only 49 percent of plans were profitable.

Attempting to remain profitable, HMOs have expanded such products as Medicare, Medicaid, and point-of-service options. According to the report, however, traditional

commercial products continue to be the source of most growth and revenue, and HMOs have had mixed success with other products.

Since 1995, HMO premiums have not risen in inflation-adjusted dollars. The *InterStudy* report predicts premium increases to average between 4 percent and 8 percent in 1998 and 1999.

U.S. Maternal Death Rates Haven't Changed

The rate at which women in the United States die from pregnancy and childbirth complications hasn't changed in 15 years. Every year from 1982 to 1996, maternal deaths occurred at a rate of seven or eight per

100,000 live births, according to the CDC. It said half of all such deaths are preventable. More than half are caused by bleeding, infection, pregnancy-induced high blood pressure, and tubal pregnancies—complications that can be prevented or treated with early diagnosis.

In some developing nations, maternal death rates are as high as 1,700 per 100,000 births. In other countries, such as Norway and Switzerland, maternal deaths occur at about half the U.S. rate. The CDC said the United States will probably fall short of its goal of 3.3 maternal deaths per 100,000 births by 2000. ■

Clinics to Test Routine Prenatal Care for Preventing HIV

Five prenatal care providers in Minnesota will participate in a project

sponsored by the Minnesota Department of Health to look at ways that routine prenatal care can be used to identify expectant mothers

who may be HIV-positive. The providers are expected to develop and implement strategies for meeting the care needs of pregnant women and new mothers with HIV while preventing the spread of the virus to their infants—one of the key objectives of the project.

Providers participating in the project include University Family Physicians, North Memorial Medical Center, Robbinsdale; Fremont Health Services, Minneapolis; West Side Community Health Services, St. Paul; Health Partners/Central Minnesota Group Health, St. Cloud; and Allina Medical Group. ■

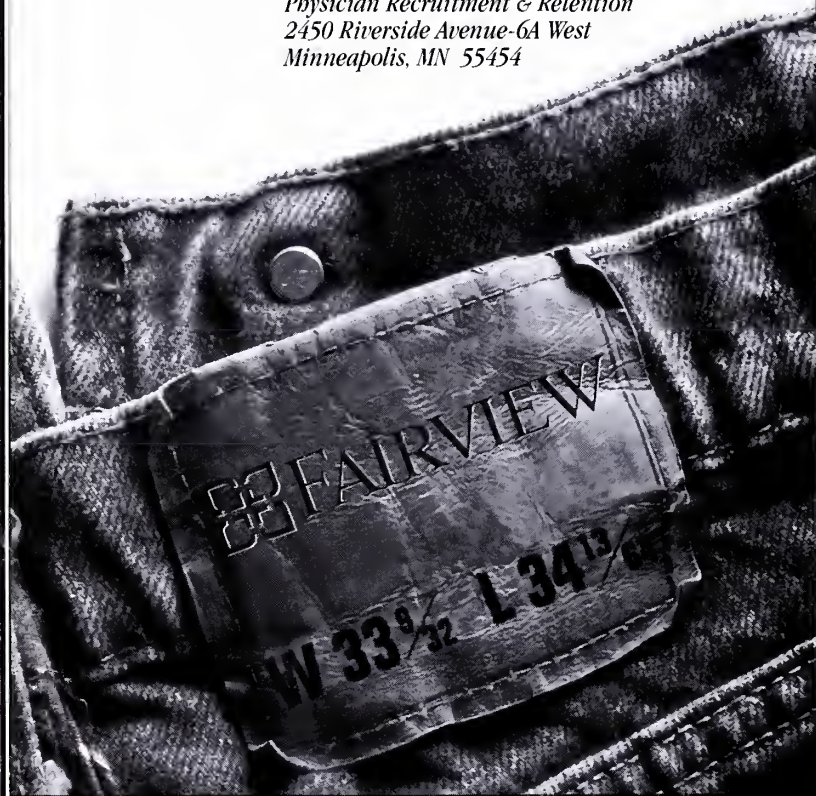
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Correction

The August News Digest incorrectly stated that David Palmer, M.D., is president of the Minnesota Orthopaedic Society. Palmer is a past president, and Steven E. Koop, M.D., is current president.

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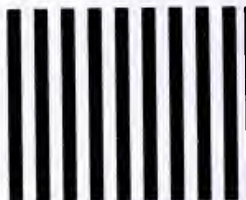


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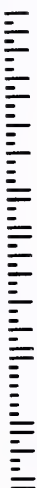
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Genetic Issues in Assisted Reproductive Technology

It is important to identify genetic factors in infertility patients, particularly those using assisted reproductive technologies.

Mary Ahrens, M.S., and Bonnie S. LeRoy, M.S.

INTRODUCTION

Continuing advances in assisted reproductive technologies (ART) allow the possibility of pregnancy for many couples who would not otherwise have a child. The majority of patients using an ART procedure have a nongenetic cause of infertility or reduced fertility, such as blocked or damaged fallopian tubes, low sperm count, or endometriosis. However, many people who take advantage of ART are infertile for genetic reasons or are at risk for having a child with a genetic disorder. As genetic counselors at the University of Minnesota, we see many of these patients. These families often present with an array of complicated medical and genetic issues.

In this brief overview, we focus on some of the common genetic causes of infertility and the importance of identifying these factors in infertility patients. We also look at the value of ART for patients at risk for having a child with a genetic disorder and the role of genetic counseling services in the care of these patients.

GENETIC FACTORS IN INFERTILITY

About 15% of all couples experience infertility.¹ It is important to evaluate possible genetic factors in all infertility patients, and especially critical for those using ART. A complete discussion of all the genetic factors known to cause infertility is beyond the scope of this paper, but we address some of the more common genetic causes.

Balanced chromosomal translocations, inversions in a chromosome, marker chromosomes, and sex chromosome abnormalities can all result in infertility. Identifying chromosomal abnormalities as a cause of infertility *before* proceeding with ART is crucial because any abnormality may pose a significant risk to a future child. A couple who is aware of this risk may choose not to become pregnant or may use options such as prenatal diagnosis. Other family members may have inherited the same abnormal chromosome and may also be at high risk for having an affected child.

RECIPROCAL TRANSLOCATIONS

Reciprocal translocations are chromosomal rearrangements that result from a breakage of nonhomologous chromosomes. The broken segments then reattach to the reciprocal chromosome. Reciprocal translocations can lead to chromosomally unbalanced gametes with excess or missing genetic material. The result may be reduced fertility, spontaneous abortions, or birth defects, some of which can be very severe. These risks depend on which chromosomes are involved in the translocation and the amount of lost or excessive material in the gametes.

ROBERTSONIAN TRANSLOCATIONS

Robertsonian translocations comprise two acrocentric chromosomes with fusion near the centromere and loss of the short arms of the chromosomes. The most common Robertsonian translocation among infertile males involves the fusion of chromosomes 13 and 14. This translocation can affect spermatogenesis, cause spontaneous abortion, or result in a fetus with trisomy 13 syndrome.² Another common Robertsonian translocation results in chromosome 14 fusing to chromosome 21. Individuals with this translocation may have a history of decreased fertility and multiple spontaneous abortions. They are also at risk of having a child with Down syndrome (trisomy 21).

CHROMOSOMAL INVERSIONS

An inversion of a chromosome involves a single chromosome with two breaks. The segment between the breaks is inverted, which changes the order of the genetic material. A person with an inversion is at risk for producing unbalanced gametes, which may or may not lead to conception. If conception is achieved, the fetus may have an unbalanced amount of genetic material. Some reports suggest that an inversion in chromosome 1 may affect spermatogenesis.² Not all inversions cause problems, however. For example, the pericentric (around the centromere) inversion of chromosome 9 [inv(9)(p11q12)] is generally considered a normal variant and does not seem to pose a risk. ➤

MARKER OR SUPERNUMERARY CHROMOSOMES

Marker chromosomes or supernumerary chromosomes (extra chromosomes that are too small to identify) are sometimes associated with problems in spermatogenesis. A child with a *de novo* marker chromosome may or may not have birth defects, depending on the size of the marker chromosome and the origin of the chromosomal material.

SEX CHROMOSOME ABNORMALITIES

Abnormalities of the sex chromosomes are often associated with reduced fertility. Some of these conditions may be identified before infertility issues arise, because of associated features. Turner syndrome (45,X), seen only in females, is characterized by primary amenorrhea, infantile genitalia, and failure of secondary sexual development. Women with Turner syndrome usually have streak gonads with no oocyte development. Other characteristics include short stature, neck webbing, low posterior hairline, broad chest with widely spaced nipples, and increased frequency of renal and cardiac anomalies. The most common karyotype is 45,X; however, 50% of women with Turner syndrome have other karyotypes, including mosaicism with a normal cell line or a cell line involving a Y chromosome. Women with Turner syndrome are fertile only rarely.²

About 7% to 13% of males who present with azoospermia have Klinefelter syndrome (47,XXY). Features of this syndrome include hypogonadism, underdeveloped secondary sexual characteristics, and azoospermia. Some males with Klinefelter syndrome have learning disabilities or mental retardation, but many are mentally normal. Because of the benign features of Klinefelter syndrome in some males, they may not realize they are affected until they experience infertility.³

Another rare syndrome, which may present during adolescence, is testicular feminization or androgen insensitivity syndrome, a condition marked by an absence of androgen receptors. Without the receptors, male differentiation cannot occur.⁴ These individuals are phenotypic females with the karyotype of a male (46,XY). External genitalia are female, but these females have a blind vagina and no uterus or uterine tubes. At puberty, breast development and feminization occur. Testes are present in the abdomen or inguinal canal, increasing the risk for gonadal neoplasia. This is a single gene abnormality inherited in an X-linked recessive pattern.

Microdeletions in the Y chromosome (q11.3) have been identified in 10% to 15% of infertile males. The affected region of the Y chromosome contains the azoospermic factor (AZF) with the gene(s) responsible for normal spermatogenesis. The size and position of the deletion correlates poorly with the severity of spermatogenesis failure, however, and the deletion is also present in some males who are fertile.⁵ This brings up the possibility of gonadal mosaicism in men who do not have the deletion but who have sons with it. In these cases, the deletion may also be a *de novo* meiotic event or a postzygotic event. Some infertile males with Y deletion who used intracytoplasmic sperm injection (a procedure

in which one sperm is injected directly into an egg to achieve fertilization) have had a son with the same Y deletion. It is too early to know if these sons will also be infertile.⁶

CYSTIC FIBROSIS

Infertility in males and possible reduced fertility in females have long been recognized in patients with cystic fibrosis (CF). The gene responsible for CF is located on chromosome 7 and is named the cystic fibrosis transmembrane conductance regulator, or CFTR gene. Affected individuals are homozygous for a CFTR mutation, of which more than 550 have been reported.³ Both parents of a child with CF carry a mutation in one of their CFTR genes, and healthy siblings of an affected person have a 67% risk of inheriting one CFTR gene with a mutation. When both parents carry a CFTR mutation, each child has a 25% chance of being affected.

CBAVD

Males with congenital bilateral absence of the vas deferens (CBAVD) are now being tested for mutations in the CFTR gene even though they exhibit no symptoms of CF. CBAVD accounts for 1% to 2% of infertility in males.³ Sixty percent to 70% of males with CBAVD have one detectable CF mutation, and 10% to 20% have two CFTR mutations.⁷ This condition may be referred to as genital cystic fibrosis or as a manifestation of CF. Men with congenital unilateral absence of the vas deferens (CUAVD) and an obstruction in the vas on the contralateral side also have a high prevalence of CFTR mutations. Because the relationship between CBAVD and CF has been established only recently, there are no clinical guidelines for treating asymptomatic males. At Fairview-University Medical Center, every male with CBAVD undergoes a sweat test and DNA studies to look for CFTR mutations. If either test is positive, patients are evaluated in the pulmonary clinic, since these findings have been associated with pulmonary changes that may eventually need treatment. It is unknown if CBAVD can be passed on to sons.

MYOTONIC DYSTROPHY

Myotonic dystrophy is a genetic condition with variable expression, inherited in an autosomal dominant fashion. The severity can vary greatly within the same family, from the congenital form to mild symptoms in adulthood. A male with myotonic dystrophy who presents with infertility usually has testicular atrophy, myopathic facies, progressive muscle weakness, mild myotonia, cataracts, frontal balding, and some intellectual impairment. Myotonic dystrophy is caused by an expansion mutation in a gene on chromosome 19 involving an unstable trinucleotide repeat, which can amplify in the next generation. This is called *anticipation* and explains why the age of onset tends to decrease and the severity of the condition may increase in successive generations. Expansions tend to be greater in female meiosis than male meiosis, explaining the increased risk for congenital myotonic dystrophy in children of affected females.⁸

ROKITANSKY SYNDROME AND CAH

In females, Rokitansky syndrome, characterized by vaginal atresia and rudimentary uterus, is a cause of infertility. Fallopian tubes and ovaries are nearly normal, with normal secondary sexual characteristics except for amenorrhea. Most cases of Rokitansky syndrome are sporadic, with a few familial cases reported.⁹

Another cause for infertility in females is congenital adrenal hyperplasia (CAH). This is an autosomal recessive condition most commonly resulting in a deficiency of 21-hydroxylase. In patients with the salt-losing form of CAH, the chances of a successful pregnancy are slight. The simple virilizing form of CAH does not have the same effect. In these patients, careful monitoring of medical therapy and surgical management of genitalia may increase fertility potential.¹

MATERNAL AGE AND GENETIC CONCERNS

"Advanced maternal age" is often a concern as couples decide to postpone childbearing and unexpectedly find themselves dealing with infertility. Women over age 34 are at increased risk of having a baby with a nondisjunction trisomy, such as Down syndrome or trisomy 18 or 13. A woman who delivers a baby at age 35 has about a 1 in 200 chance of having a child with a nondisjunction chromosome abnormality. At age 38, this risk has doubled to 1 in 100, and it doubles again at age 41 to 1 in 50. Women should be made aware of their risk prior to pregnancy. Prenatal diagnosis is an appropriate option for women delivering past the age of 34.

ASSISTED REPRODUCTIVE TECHNOLOGIES FOR PATIENTS WITH GENETIC CONCERNS

The diagnosis of a single gene abnormality as a cause of infertility *before* using ART is critical. Couples should be informed of their risk for having a child with a genetic disease and given options for dealing with this risk before a pregnancy occurs. For example, if a male patient with CBAVD has at least one gene mutation associated with CF, his partner should also be tested for CF. The CF carrier rate in the general population is 1 in 25. Although DNA analysis will detect only 90% of CF carriers, it can help couples better understand their risk for having a child with CF. If both partners are carriers, they have the option of using prenatal testing, donor sperm, a donor egg, or adoption.

In the past, patients experiencing infertility due to genetic factors such as a chromosome abnormality had a very limited number of options available to help them have a family. Advances in ART have changed that for some conditions.

DONOR SPERM

The use of donor sperm with in vitro fertilization (IVF) is an option for males who produce few or no sperm, such as those with Klinefelter syndrome or congenital bilateral absence of the vas deferens. Donor sperm is also useful in cases where a man does not want to risk passing a genetic condition to his child. For certain dominant conditions, such as Huntington disease or myotonic

dystrophy, or chromosome abnormalities, prenatal diagnosis is possible, followed by termination of an affected pregnancy, although some patients consider this unacceptable. Donor sperm is also an option for couples who are known carriers of a recessive disorder such as cystic fibrosis or Tay-Sachs disease (TSD). In this case, the sperm donor must be carrier tested for the gene.¹⁰

DONOR EGGS

In vitro fertilization using a donor egg is an option for women with sex-linked conditions such as hemophilia or Duchenne muscular dystrophy, recessive conditions such as CF or TSD, or chromosome abnormalities. Donor eggs have also provided women with Turner syndrome the chance to have a child.¹⁰

SURROGACY

Surrogate motherhood can be helpful for women affected with phenylketonuria (PKU). With this option, a woman can have a child that is genetically hers but avoid the severe teratogenic effects that occur in the pregnancies of women with PKU. Women with Rokitansky syndrome, who are able to provide eggs but do not have a uterus, can also benefit from surrogate motherhood.

SPERM ASPIRATION AND EXTRACTION

Microsurgical epididymal sperm aspiration (MESA) or testicular sperm extraction may be useful for men who produce a very small number of sperm, as in Klinefelter syndrome, or who cannot transport the sperm, as with CBAVD. In some cases, a small number of sperm cells can be retrieved and injected directly into an egg, increasing the chance of a successful pregnancy.⁷ However, it is important to remember that by using the sperm of someone with CBAVD or Klinefelter syndrome, the resulting child may be at high risk for a genetic condition.

PREIMPLANTATION GENETIC DIAGNOSIS

The most promising new technology—which may change our approach to dealing with genetically related infertility—is preimplantation genetic diagnosis (PGD). This procedure gives couples a chance to have a child unaffected by a genetic condition, without the uncertainty involved in becoming pregnant and using prenatal diagnosis.¹¹ PGD involves harvesting cells from very early embryos after IVF or removing a polar body from an oocyte for analysis. Some genetic conditions can be diagnosed after amplifying the DNA with polymerase chain reaction; chromosomes can also be studied using fluorescent in situ hybridization (FISH) techniques.¹²

Use of this procedure is presently very limited. For genetic conditions, direct gene analysis must be possible, and for chromosome abnormalities, FISH probes particular to the abnormality must be available. Also, misdiagnosis due to contamination is a concern because of the small amount of genetic material involved.¹³ In a limited number of infertility centers, however, PGD is being used to diagnose chromosomal abnormalities, sex-linked conditions, single-gene conditions, and many other genetic conditions. Costs for this procedure can be very high

(\$7,000 to \$10,000 per cycle in some centers), since it involves both IVF and genetic testing on a small amount of material. Success rates are lower than those of standard IVF, presumably because of the manipulation of the embryo.^{7,12}

THE ROLE OF GENETIC COUNSELING IN ART

The importance of including genetic counseling services in the care of ART patients is well illustrated in two recent articles that studied couples who were referred for genetic counseling before using intracytoplasmic sperm injection to treat infertility. In one study, in three out of 142 couples, one of the partners was found to have a dominant disorder. Ten individuals had a heritable chromosome abnormality, six males had CBAVD (five of whom carried a CF mutation), and one had left renal agenesis, which is sometimes genetic.¹⁴ In the other study, which reported the results of chromosome analysis on 150 couples, 12% of the men and 6% of the women carried some sort of chromosome abnormality.¹⁵ The affected individuals in both studies not only needed to address the issue of infertility but also their high risk for having a child with a genetic disorder.

Genetic counseling involves assessing a genetic risk and assisting patients in understanding the risk and choosing appropriate genetic testing and reproductive options. Genetic counseling also offers support to families dealing with these complicated decisions. Genetic counselors are board certified and trained in human

genetics and psychosocial counseling. Most major medical centers in the Twin Cities employ genetic counselors who are qualified to work with people using ART.

IDENTIFYING PATIENTS WHO WOULD BENEFIT FROM GENETIC COUNSELING

Following are some questions physicians should consider asking infertility patients or couples to assess whether they would benefit from genetic counseling. If a patient answers yes to any of these questions, the physician should recommend formal genetic counseling.

1. Do you or your partner or anyone in your family or your partner's family have any of the following:

- a known genetic (inherited) condition such as cystic fibrosis or Huntington disease?
- balanced chromosome rearrangement?
- a birth defect, mental retardation, or a physical handicap?

- vision or hearing loss?

- multiple miscarriages?

- children who died young with no known cause?

2. Are you 34 years or older (women only)?

3. Are you related to your partner's family in any way (such as first or second cousins)?

4. Are you or your partner from an ethnic group with a known higher risk for a genetic condition (Eastern European Jewish, Mediterranean, Asian, African American)?

5. Have you or your partner or anyone in your family

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or your partner's family ever undergone genetic counseling and/or testing? If yes, what for?

Genetic counseling allows at-risk couples to be fully informed of their risks so that they can make effective decisions about their family-building options. **MM**

Mary Ahrens is a genetic counselor at Fairview-University Medical Center. Bonnie LeRoy is director of the graduate program in genetic counseling at the University of Minnesota's Institute of Human Genetics.

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Discrimination Against the Infertile

The Supreme Court Speaks

With Bragdon v. Abbott, the Supreme Court defined infertility as a disability, subject to coverage by the Americans with Disabilities Act.

Susan M. Wolf, J.D.

Discrimination against infertile individuals is one of the last bastions of socially accepted bias. Employers may refuse time off for infertility treatment. Insurers may deny or severely limit coverage for those treatments. Even friends may regard in vitro fertilization and other efforts as an indulgence.

In June, however, the Supreme Court ruled that inability to reproduce is a disability, and infertile people are covered by the federal Americans with Disabilities Act (ADA).¹ On the surface, the case before the Court had nothing to do with infertility. Plaintiff Sidney Abbott was infected with HIV. Because of that, her dentist, Randon Bragdon, refused to fill a cavity unless it was done in a hospital, despite the added cost.

Abbott sued under the ADA. Her HIV had not yet produced serious symptoms—it was not yet an “impairment that substantially limits one or more major life activities,” as the act defines disability. So she argued that what made her disabled was her inability to reproduce without the risk of transmitting HIV to her sexual partner and the child. A majority of the Court agreed. Ruling in *Bragdon v. Abbott*, the justices found that a physical impairment resulting in an inability to reproduce normally is indeed a disability. And the inability need not be absolute. In Abbott’s case, it was enough that studies had found a “statistically significant” risk of transmission to male partners and children.

IMPLICATIONS FOR INFERTILITY TREATMENT

This ruling has significant implications for infertility treatment. It says that a physical impairment that produces infertility is not just an unlucky roll of the dice, but a medical disability. For people who wish to reproduce, an inability to do so is a legitimate medical problem.

This decision immediately gives many people a claim to medical help. About one in eight American couples is infertile, defined as unable to conceive after a year of unprotected intercourse. These individuals should be entitled to diagnostic expertise and therapy for inability to reproduce.

Insurers should also be obligated to cover diagnosis and treatment of infertility. A handful of states now require insurers to provide such coverage or to offer it for an increased premium. But most states simply tolerate insurers’ discrimination against the infertile. The *Abbott* case gives fuel to plaintiffs who have sued insurers under the ADA. The statute allows insurance companies to make underwriting decisions, but not when they serve as a subterfuge for forbidden discrimination. Many observers have argued that this means insurers must have a reasonable actuarial basis for excluding coverage of a disability and must treat disabilities alike if they impose similar costs on the insurer. In other words, insurers cannot target a particular disability such

as infertility for discriminatory treatment. Some courts, however, have been more lenient, saying the ADA only forbids discrimination against the disabled as a group, not different treatment (such as less insurance coverage) for different disabilities.² In any case, it will be more difficult for insurers to exclude or severely limit infertility coverage after *Abbott*. Such decisions will be far more likely to provoke a challenge. That does not mean insurers will be pressed to cover every infertility treatment, no matter how experimental; insurance contracts frequently exclude all experimental treatments across the board. But there will be renewed calls to treat infertility like other disabilities requiring access to care.

Employers, too, will have to accommodate the needs of infertile people. Those needs may include schedule adjustments and time off for diagnosis and treatment. Couples coping with the stresses of infertility should not have to sneak around or pretend they have some other, “acceptable” medical problem. They should be able to be honest without risking their jobs, their bosses’ respect, and their colleagues’ support.

SHIFT IN ATTITUDES TOWARD INFERTILITY

The *Abbott* case represents a profound change in attitudes toward infertility. And some critics are already questioning how far we should go. The dissenting justices in the Su-

preme Court case complained that "every individual with a genetic marker for some debilitating disease" that could be passed on to a child could now be considered disabled.³ The justices are right. Indeed, some couples seek reproductive assistance precisely to avoid passing on a debilitating disease to their offspring. The needs of those couples are no less legitimate than those of couples seeking treatment for infertility due to endometriosis or low sperm count. They all face a medical barrier to normal reproduction.

A more serious objection is that infertility is normal in women after a certain age, and surely not all postmenopausal women are disabled. The problem, then, is determining at what point infertility becomes no longer a disability, but normal. One suggestion is to use as a cutoff the age at which a majority of women can no longer successfully reproduce.⁴ This merits further discussion. It seems unfair to deny disability discrimination protection, insurance coverage, and perhaps treatment to a woman

the moment she reaches an age at which 51 percent of women cannot reproduce. She may be among the 49 percent who can, with problems that are easily correctable. By analogy, a majority of Americans above a certain age probably need eyeglasses; that does not make us redefine myopia or other visual disorders as normal and therefore unworthy of correction. In the reproductive sphere, we may need to define the cutoff with more sophistication than mere age allows, considering instead diagnosis and whether the underlying cause of the problem is amenable to treatment.

REGULATION AND OVERSIGHT OF REPRODUCTIVE MEDICINE

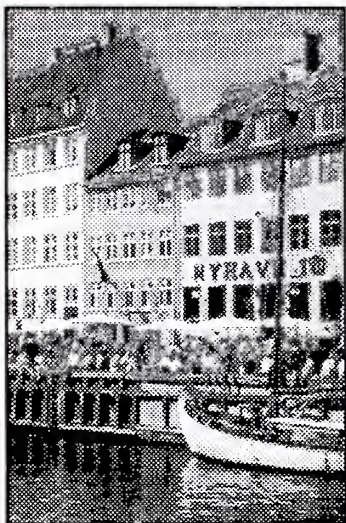
However these limits are set, the fundamental principle in *Bragdon v. Abbott*—that infertility is like other disabilities—has broad implications for reproductive medicine. American infertility practice, though it certainly provokes wide discussion and debate, remains among the least regulated in the developed world.⁵ Calls

for a national body to oversee infertility treatment, as in England, have been repeatedly rebuffed. Moreover, the federal government has long avoided funding research in this area because of controversy over abortion and the status of the embryo and fetus. Thus, the usual federal regulations protecting human subjects in research by requiring Institutional Review Board (IRB) review and more rigorous informed consent often do not apply in reproductive medicine. Even the federal Fertility Clinic Success Rate and Certification Act⁶ is underfunded and mainly just provides a clearinghouse for clinic success statistics.

While some commentators have defended the hands-off approach, arguing that it is common in medical practice, reproductive medicine is actually a mix of accepted practice, clinical innovation, and formal research. The research is subject to less oversight than in other medical specialties, as the human subjects regulations may not apply. Moreover, innovative treatments often go from

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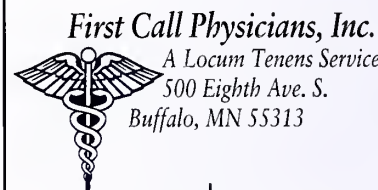
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the scientist's bench to the clinician's bedside with inadequate demonstration of safety and efficacy. Even in the practice sphere, the relatively small role played by third-party payers means that much of the review of new treatments and practice patterns that is typical of such payers does not occur.

Certainly there are dangers in increasing oversight. Infertility treatment raises controversial issues that could provoke excessive regulation and interference. Embryo research, control of a child's genetic makeup through preimplantation genetic diagnosis, and multifetal pregnancy reduction are among the practices that have provoked debate. Fear of such issues has been a significant factor in preventing even the usual baseline of governmental and private funding and oversight, in both research and practice. But trying to avoid the issues has not made them go away. Instead, the result has been increased controversy and a sometimes irrational fear of everything from genetically manipulated "de-

signer babies" to cloning. These reactions could result in unwise, knee-jerk regulation.⁷

To be sure, professional societies such as the American Society for Reproductive Medicine have tried to leap into the breach. They have diligently promulgated guidelines on issues ranging from embryo biopsy to egg donation for postmenopausal women. But membership in these organizations and compliance with their guidelines are voluntary. In no other domain of medical research and practice do we depend so heavily on professional guidelines with such minimal governmental and payer review.

The Supreme Court's suggestion that infertility is like other disabilities may signal the beginning of the end of this special treatment. If infertility treatment is not a luxury or an indulgence, but medical help to overcome a disability, then it merits not only greater financial support but more oversight. For example, human subjects research, including the introduction of new infertility inter-

ventions, should require the standard protections, including IRB review and detailed consent from subjects. New treatments raising serious issues of safety and efficacy should go through formal research review.

Many policymakers have already called for increased oversight in reproductive medicine. A recent report from the New York State Task Force on Life and the Law made a number of sensible suggestions, balancing the need for oversight against the dangers of excessive interference.⁸ Other governmental bodies have begun to take a close look at infertility practice and research, including Congress⁹ and the National Bioethics Advisory Commission (NBAC).¹⁰

The Supreme Court's decision in *Braddon v. Abbott* fits into a broader trend toward regarding infertility as a legitimate medical problem warranting serious attention. That is all to the good. We may now see discrimination against the infertile finally become unacceptable and assisted reproduction enjoy the funding and oversight common in other

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realms of medical research and practice. Reproduction will probably always raise controversial issues requiring deliberation from professional groups and public commissions. But that deliberation should build on a foundation that integrates assisted reproduction into the wider framework governing the rest of medicine.

MM

ACKNOWLEDGMENTS

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Susan Wolf is an associate professor of law and medicine at the University of Minnesota Law School and a faculty member in the university's Center for Bioethics.

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Reproductive Technologies

Public and Private Meanings

Two new books examine the social and personal implications of medically assisted reproduction.

Elaine Tyler May, Ph.D.

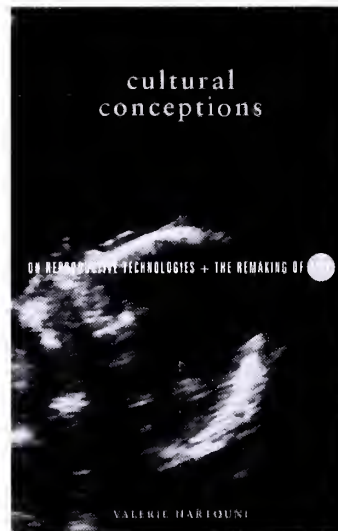
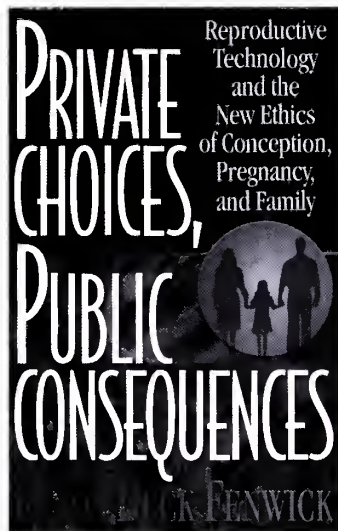
The “new reproductive technologies” have generated flurries of debate and discussion, in the abstract as well as the particular. With each new development comes the “what if’s.” More than a century ago, the first experiments in artificial insemination raised fears that humans might be bred much like farm stock—which some people at the time thought was an excellent idea. Twenty years ago, when Louise Brown, the first child conceived through in vitro fertilization, was born, observers raised alarms that babies would now be created in “test tubes” rather than in families, even though IVF had nothing to do with test tubes and everything to do with family. Today, cloning experiments lead to questions about the possibility of carbon-copy humans—as if humans could ever be carbon copied. Ask anyone who has an “identical” twin.

These dire predictions may seem extreme, but they are part of a larger discussion in which citizens try to make sense of new technologies that alter the nature of reproduction, raising ethical dilemmas and questions about the meaning of parenthood, kinship, and family. Some see utopian possibilities, while others see

dystopian nightmares. But virtually everyone sees that these are complex issues and questions, with no easy answers.

Many of the most troubling ethical dilemmas have emerged not from abstract worries but from the actual and often unexpected problems that have emerged in particular situations, such as surrogates who want to keep the babies they bore, or couples who divorce, leaving frozen embryos in limbo. It is, of course, impossible to separate the medical aspects of reproductive technologies from the human circumstances of their use.

Two recent books examine the personal and social implications of medically assisted reproduction. Lynda Beck Fenwick’s “Private Choices, Public Consequences: Re-



productive Technology and the New Ethics of Conception, Pregnancy, and Family” (Dutton, 1998) begins at the level of the individual and raises larger social issues; while Valerie Hartouni’s “Cultural Conceptions: On Reproductive Technologies and the Remaking of Life” (University of Minnesota Press, 1997), begins with social practice and moves into an analysis of particular cases.

Although the authors examine many of

the same issues and cases, they come to different conclusions. Ultimately, Fenwick believes that ethical dilemmas need to be resolved at the individual level—people making informed, responsible decisions based not only on personal desires but on the best interests of the children, their families, and society as a whole. Hartouni sees individual choices as constrained by deeply entrenched social attitudes and hierarchies grounded in race, class, and gender. She argues that any solutions must address these inequalities first.

Fenwick, a former trial attorney, considers the legal, social, and ethical issues surrounding a number of cases that involved difficult decisions. These include a 53-year-old woman who bore a child using an egg donor;

a baby born without a brain, whose parents were denied the right to donate the infant's healthy organs because of legal definitions of "brain death"; a young pregnant woman diagnosed with cancer who refused

treatment that would endanger her fetus; a woman who served as a surrogate for her daughter and gave birth to her own grandchild; and many others. Fenwick does not pass judgment on individual choices but

looks at the possible consequences, not only for the children who are born as a result of medical intervention, but also for other family members and society as a whole. She also discusses a survey she conducted of more than 300 people about a wide range of issues pertaining to reproductive technologies.

Whereas Fenwick argues that individuals should make informed and responsible decisions, Valerie Hartouni believes that individual choices are influenced by complex cultural and institutional pressures and assumptions grounded in beliefs about gender, race, and class. Using a feminist, cultural-studies approach, Hartouni offers an insightful analysis of the ways that legal, medical, and social practices frame women's experiences. For example, in public discussions about the 53-year-old woman who gave birth to a child using a donor egg, nobody suggested that she was not the mother of the child. However, in the case of a young black woman who agreed to participate as a "surrogate mother," using another woman's egg, critics attacked her desire to keep the child, claiming that she was not the "mother." Hartouni argues that the class and racial dimensions of these cases determined much of the public discourse. Although the cases were not identical, one woman was granted the status of "mother," whose maternal feelings were "natural," while the other was assumed to have no maternal feelings because the fetus was not "hers." Neither woman, of course, was genetically related to the baby she bore. But, Hartouni writes, the prevailing assumptions about what is "natural" in medically assisted births rest largely on the class and racial identities of the women involved.

Fenwick demonstrates the impact of individual decisions on society; Hartouni shows how social beliefs affect individual women. Both authors offer complex understandings of the issues surrounding assisted reproduction; neither sees it as strictly utopian or dystopian. Taken together, these two thought-provoking books challenge individuals and social institutions to proceed with cau-

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Elaine Tyler May is a professor of American studies and history in the American Studies Program at the University of Minnesota and author of "Barren in the Promised Land: Childless Americans and the Pursuit of Happiness" (Harvard University Press, 1997).

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Oct. 8 **Current Issues in Point-of-Care Testing** Mayo Medical Laboratories; Mayo Clinic, Rochester, MN. CONTACT: Julie McAdams, 200 First Street SW, Rochester, MN 55905; 507/284-8599.

Oct. 8 **Domestic Violence: The Invisible Victims** Hennepin County Medical Center; Pillsbury Auditorium/HCMC, Minneapolis, MN. CONTACT: Mary Meredith, HCMC Education Department, 701 Park Avenue, Mail Code 862B, Minneapolis, MN 55415; 612/347-2392.

Oct. 9 **Laser Lead Extraction Conference** St. Paul Heart Clinic; Minneapolis/St. Paul Airport Hilton, Minneapolis, MN. CONTACT: Sandie Campbell, St. Paul Heart Clinic, 255 North Smith Avenue, #100, St. Paul, MN 55102; 651/298-1272.

Oct. 9-10 **Current Issues in Phlebotomy** Mayo Medical Laboratories; Mayo Clinic, Rochester, MN. CONTACT: Julie McAdams, 200 First Street SW, Rochester, MN 55905; 507/284-8599.

Oct. 11-14 **14th Annual Echocardiography in Congenital Heart Disease—Back to the Basics** Mayo Foundation; Mayo Clinic, Rochester, MN. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Oct. 14-17 **Strategies in Primary Care Medicine (includes three hours of infection control CME)** HealthPartners Institute for Medical Education; Grand Hotel at the Mall of America, Bloomington, MN. CONTACT: Sharon Kopp, Registrar, Regions Hospital, 640 Jackson Street, St. Paul, MN 55101; 651/221-3992.

Oct. 15-16 **Laboratory Diagnosis of Fungal Infections: A Beginning Course** Mayo Medical Laboratories; Mayo Medical Center, Rochester, MN. CONTACT: Julie

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Nov. 12-13 **Critical Care (includes two hours of infection control CME)** HealthPartners Institute for Medical Education; Holiday Inn East, St. Paul, MN. CONTACT: Sharon Kopp, Registrar, Regions Hospital, 640 Jackson Street, St. Paul, MN 55101; 651/221-3992.

Nov. 20 **HIV Primary Care Conference** Allina Health System; Metropolitan Conference Center, Minneapolis, MN. CONTACT: Julie Page, Clinical Education-81475, PO Box 9310, Minneapolis, MN 55440-9310; 612/992-3897.

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Videotapes: **Antibiotic Resistance/STDs, HIV/Adult Immunizations, Diarrheal Parasitic Diseases/Foodborne Diseases** University of Minnesota. CONTACT: Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600 or 800/776-8636.

Oct. 16-17 **Fall Conference: Internal Medicine for the Family Physician** Minnesota Academy of Family Physicians; Riverport Inn and Suites, Winona, MN. CONTACT: Rhonda Steller, 600 South Highway 169, Suite 1680, St. Louis Park, MN 55426; 612/542-0130, toll-free 800/999-8198.

Oct. 22-23 **1998 Diabetes Conference: Diabetes in an Ever-Changing World—Are You Ready?** St. Mary's/Duluth Clinic Health System; Duluth Entertainment Convention Center, Duluth, MN. CONTACT: Diane Torvick, 400 East Third Street; Maildrop 5AV2ME, Duluth, MN 55805; 218/725-3838.

Oct. 23 **Insights & Outlooks 1998 Cardiology Symposium** St. Paul Heart Clinic; United Hospital Conference Center, Lower Level, St. Paul Heart & Lung Building, St. Paul, MN. CONTACT: Mark Turnbull, St. Paul Heart Clinic, 255 North Smith Avenue, #100, St. Paul, MN 55102; 651/298-1207 or 800/292-0616.

Oct. 24-25 **Mayo Clinic Update in Cardiovascular Diseases** Mayo Foundation; Leighton Auditorium, Siebens Medical Education Building, Mayo Foundation, Rochester, MN. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Oct. 25 **Update in Addiction Medicine** Mayo Foundation; Phillips Hall, Siebens Medical Education Building, Mayo

Foundation, Rochester, MN. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Oct. 29 **Geriatric Care for Primary Care Physicians** Mayo Foundation; Leighton Auditorium, Siebens Medical Education Building, Rochester, MN. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

NOVEMBER 1998

Nov. 6-7 **Mayo Sports Medicine Symposium** Mayo Foundation; Mayo Foundation, Rochester, MN. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Nov. 12 **Validating Spiritual Care Through Clinical Research** Mayo Continuing Nursing Education; Siebens Medical Education Building, Mayo Medical Center, Rochester, MN. CONTACT: Registrars, Mayo Continuing Nursing Education, 200 First Street SW, Eisenberg SL-41U, Rochester, MN 55905; 800/545-0357; cne@mayo.edu.

Nov. 12-13 **Critical Care (includes two hours of infection control CME)** HealthPartners Institute for Medical Education; Holiday Inn East, St. Paul, MN. CONTACT: Sharon Kopp, Registrar, Regions Hospital, 640 Jackson Street, St. Paul, MN 55101; 651/221-3992.

Nov. 19-21 **Annual Orthopaedic and Trauma Seminar** Hennepin County Medical Center; Minneapolis Convention Center, Minneapolis, MN. CONTACT: HCMCME, 701 Park Avenue, Mail Code 861B, Minneapolis, MN 55415; 612/347-2075, toll-free 888/263-4262.

Nov. 20 **HIV Primary Care Conference** Allina Health System; Metropolitan Conference Center, Minneapolis, MN. CONTACT: Julie Page, Clinical Education-81475, PO Box 9310, Minneapolis, MN 55440-9310; 612/992-3897.

DECEMBER 1998

Dec. 3-4 **Cardiovascular Conference** HealthPartners Institute for Medical Education; Holiday Inn East, St. Paul, MN. CONTACT: Sharon Kopp, Registrar, Regions Hospital, 640 Jackson Street, St. Paul, MN 55101; 651/221-3992.

FEBRUARY 1999

Feb. 1-5 **Continuing Challenges in Hematology, Oncology and Hematopathology** Mayo Medical Laboratories; Beaver Run Resort, Breckenridge, CO. CONTACT: Julie McAdams, 200 First Street SW, Rochester, MN 55905; 507/284-8599.

Feb. 6-13 **HealthEast 1999 Winter Medical Seminar** HealthEast; Cabo San Lucas, Mexico. CONTACT: Annette Anderson, 1700 University Avenue W, St. Paul, MN 55104; 651/232-5104.



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MDsearch assists medical groups and hospitals in their recruiting efforts. For confidential information on opportunities in the Upper Midwest, send CV and/or call collect Mary Jo Cordes, MDsearch, PO Box 21507, St. Paul, MN 55121; 612/454-7291. Fax: 612/454-7277. (2/93-R)

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What's All This about Rhetoric?

(Hint: You're reading some right now.)

James Kaufmann, Ph.D.

Rhetoric. It's a word we hear a lot. In common usage, it often refers to language whose primary purpose is not communication, but is more like posturing, perhaps with the intention of deceiving. For example, "So-and-so said such-and-such, but it's all just rhetoric."

For the word to be useful to us, we need a broader definition. We will use rhetoric to refer to the art of using language to inform, persuade, move, or otherwise influence someone. Rhetoric is much more than "just rhetoric."

THE RHETORICAL SITUATION

Any time you have a speaker (or writer), an audience, and a topic, you have a rhetorical situation. Making a presentation or writing a paper? You're in a rhetorical situation. Talking to a patient? Rhetorical situation. Chatting with a friend? Ditto. Rhetoric is everywhere.

When writing, most physicians understand the importance of the topic and pay careful attention to it. Too much attention, sometimes. Obsessed with the data or other details, writers can lose sight of whether they're meeting the audience's needs, or even whether they're achieving their own goals as writers. Good texts are balanced: their authors keep in mind not only the intricacies of the topic, but also their reason for writing and their audience's reason for reading.

PURPOSE AND AUDIENCE

Why am I doing this, and who am I doing it for? (Okay, *whom*.) Always ask yourself these questions at the outset of a writing task, and also along the way. Purpose and audience, not content, should drive your writing decisions.

Examine your purpose. Many writers don't do this. They may feel their purpose is to communicate the results of a study. I would suggest their purpose is to get published. They may feel their purpose is to describe a project they would like to conduct. I would suggest their purpose is to get funded. Focusing on the immediate purpose (to get published or funded) increases your chances of achieving subsequent purposes in writing.

Focusing on your immediate purpose brings your audience into sharper relief, which will combat the natural tendency to overlook the audience while attending exclusively to the topic. You'll be less likely to assume readers know everything you know; consequently, you'll be more likely to include some text that simply educates them, so they can better understand the material. You'll be less likely to assume they share your attitudes and beliefs; consequently, you'll be more likely to anticipate and counter objections to your statements and arguments. Perhaps most important, you'll be more likely to:

READ THE INSTRUCTIONS!

All audiences have expectations of a text. Good writers succeed partly because they have the ability to anticipate and satisfy audience expectations. Writers are often frustrated by their inability to intuit what the reader wants. Ironically, however, much of what the audience expects is specified in the journal's "Author Instructions" or in the funding source's information for applicants. You can infer more of what the audience expects from a careful examination of successful texts (published articles, funded proposals) to identify characteristics that seem to have helped their authors achieve their goals.

THERE'S NO PERFECT TEXT

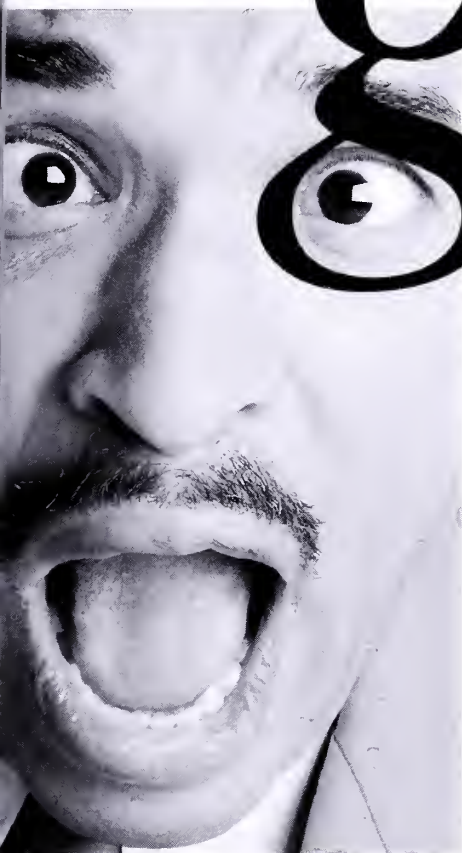
Don't try to be perfect; just try to be effective. In writing, effectiveness is the happy coincidence of the writer's purpose and the reader's expectations. MM

James Kaufmann is director of the office of communications, Hennepin Faculty Associates, in Minneapolis. © 1998 James Kaufmann.

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Minnesota Medicine

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Illustration by Elizabeth Lada.

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In "Guilty by Reason of Insanity," murderers' stories are told with the breathless tone of daytime talk shows.

A Gripping Tale

This month we're bringing you a historical novel. Immediately you turn to the table of contents expecting to see a feature by Gore Vidal or William Styron. Instead, you see articles about a coroner, a medical

examiner, a Jewish death ritual, a pathologist critiquing the demise of the autopsy, and a laboratory taking scrapings from mummies.

History? Novel? Yes, both—and I will prove it.

History is the study of events and people of the past. A typical blend for the historian's brew is letters, documents, and newspapers.

Out of primary and secondary sources, the historian concocts a plausible story, as close to reality as possible. If it's good history, the final plot of this story illuminates the past and informs the present.

The characters in our articles study the past, but just one very narrow part of the past—death. Their sources are limited primarily to bodies or remains of bodies. Yet the story they weave is as rich as those of Toynbee or Churchill. And the lessons taught are edifying and educational.

It wasn't always obvious that studying death was worthwhile. For centuries, the societal taboo on vivisection stalled medical and scientific knowledge until iconoclasts like William Harvey figured that dissection was the only way to know how the body worked. For the three centuries since Harvey, the dead have been textbooks. Each of our featured professions probes these books for different insights.

Medical examiners and coroners study death to discover what went wrong with a life. They are the cryptographers of the crypt, unraveling puzzling deaths with possible legal twists.

Paleoarchaeologists study death to reconstruct civilizations, deciding how they lived and how they died. As detailed by UMD paleopathologist Arthur Aufderheide,

M.D. (page 28), medical problems suffered by these ancient, sometimes obscure peoples read like chapters from "Harrison's Textbook of Medicine." The millennia are different; the diseases are the same.

The anatomic pathologist studies death to enlighten the clinician and console the survivors. The old joke that "pathologists know the most, but it's too late" is not entirely true. Answers after a death do make a difference for relatives and physicians. The pathologist's actions close a chapter in the life of the deceased and of the family.

People and diseases of the past offer lessons for the present—true history. But where's the novel? The drama comes with the stories. The cases of county coroner Janis Amatuzio, M.D. (see this month's profile, page 8), have characters and plots worthy of any bestseller or movie. Dr. Aufderheide's mummies unfold the lore of the ancients like a Michener book.

The real pathos, however, comes with the interaction between the living and the dead. Survivors' grief reaches into the morgue. How we treat the dead, even as we study them, is important. Witness the meticulous respect of the Chevra described in the Perspectives piece by Joel Stein, M.D. (page 12), as loving members of a community prepare a body with purification and prayer. Hear Dr. Amatuzio describe her philosophy of compassion and honor for the deceased and their families.

Most medical students' first professional encounter with death is in the anatomy lab. Although I'm sure black humor still surfaces occasionally, respect, compassion, and even love dominate the atmosphere of modern dissecting rooms and should reign in morgues and grief rooms. As the dead tell us their histories with drama and pathos, we need to study them with a reverence that will preserve the sanctity of their lives.

—Charles R. Meyer, M.D., Editor-in-Chief



.....
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99 Chevrolet Tahoe LS 4dr	\$33,187	\$30,016	\$518	\$417	\$383	\$353
99 Chevrolet Suburban 1/2 LS	\$36,548	\$33,150	\$573	\$467	\$419	\$397
98 Toyota 4-Runner SR5 4dr	\$32,273	\$30,155	\$601	\$495	\$409	\$372
99/98 Jeep Gr. Cherokee Laredo 4dr	\$28,440	\$26,800	\$535	\$437	\$411	\$368
99 Ford Expedition XLT 4dr	\$34,120	\$31,334	\$530	\$432	\$390	\$367

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* Sale price before tax, license, and license fees.

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The Side Effects of Direct-to-Consumer Promotion

It all started with Rogaine. There on the TV screen was a thirty-something man in front of his mirror anguishing over his vanishing follicles and calculating his comb-over. A voiceover soothingly assures the man that he could do something about balding and cryptically instructs him to “call his doctor.”

Since Rogaine, direct-to-consumer (DTC) advertising of prescription drugs has mushroomed. We see Claritin on buses and Rezulin on full-page *People* magazine spreads. Encouraged by greater FDA leniency granted in a 1997 ruling, drug makers are expected to spend \$200 million on TV spots this year. They no longer have to talk around the name of a product, leaving the final secret to be revealed by your doctor. Now they can mention the name of a product, although the ads must also mention major risks and refer to sources of consumer information like 1-800 numbers or Web sites.

Drug companies argue that DTC ads lead to better-informed patients. Background information on the Pharmaceutical Research and Manufacturers of America Web page last year listed a few advantages of the ads: enhancing “consumer knowledge about diseases and treatments,” promoting “competition among products,” and starting “dialogue between patients and doctors.” According to drug manufacturers,

DTC short-circuits the inefficient “educational” journey that new products typically take, from journal advertising to drug detail people to physician awareness, and finally to physician prescribing. In other words, there’s no filtering process. DTC advertising allows Madison Avenue public relations techniques free rein with an audience of millions.

For doctors, DTC ads are at best irksome and at worst dangerous. As a science-oriented medical student, I was surprised and dismayed when I first saw medical journal ads showing diaphoretic, plethoric people clutching their chests in a promotion for an anti-animal drug.

Interpreting medical science for patients is tough. The words are strange and the concepts are stranger. Mix in preconceived notions of health and disease and a large dose of anxiety, and reaching some rudimentary understanding with patients about their disease and their treatment at times seems Sisyphean. DTC ads imprint patients with simplistic, possibly misleading, ideas about prescriptions, which makes physicians’ educational job even harder.

What DTC ads mean for patients is satirized in a recent Dave Barry column. A DTC ad alerts Barry that he might suffer from “paraboli-cal distabulation of the frenulum.” Barry’s fear is heightened by the crescendo of side effects rattled off by the announc-

er. Barry concludes, “So basically, the message of these drug commercials is 1) You need this drug, 2) This drug might kill you.” How long would it take the average doc to put those messages into perspective?

With DTC ads, the potential for misunderstanding is huge. A recent *People* magazine ad for Rezulin made this mild statement: “Once-a-day Rezulin may change how your doctor treats type 2 diabetes.” Interspersed with that moderate claim, however, are grinning patients stating that Rezulin “makes my life so much simpler it is really working for me.” On the next page, in a large, bold font, are statements like, “can reduce and perhaps eliminate the need for insulin injection” and “over 900,000 people have begun using Rezulin to help manage diabetes.” Smaller type describes potential side effects. Read only the bold statements, and Rezulin is hard to pass up.

Drug companies’ claim that DTC ads are educational is reminiscent of tobacco companies’ claim to be concerned about their customers’ health. A recent report on data available to drug companies reads: “Source Informatics has the ability to track prescription sales in test markets upon execution of DTC advertising campaigns, hours after the campaign begins, providing timely and actionable prescription sales information in those test markets

to pharmaceutical manufacturers and healthcare advertising agencies. This information is then used to determine the success of the campaign, in actual prescription sales, and allows pharmaceutical manufacturers and their agencies to adjust ad creativity, media mix, and media spending to maximize the DTC return on investment."

And it works. Those rolling bus ads have led to a 54 percent market share for Claritin.

Certainly doctors can't shoulder all the drug educational needs of patients. Even the expanding role of pharmacists is not enough to keep patients adequately informed about drugs. But sales-oriented PR doesn't help. Perhaps what we really need is those same innovative folks who dreamed up ads promoting prostate medicine that used water balloons clamped with clothespins. They might be able to develop a truly educational drug broadcast, sort of a pharmaceutical "Sesame Street," that will make complex therapeutics easy to grasp.

Dave Barry said he liked it better in the old days, when there were only commercials you could understand, like Colgate's demonstration of Gardol toothpaste, which showed a baseball bouncing off an invisible shield. Actually, this ad was no more realistic or scientific than DTC pharmaceutical ads. It's just that choosing diabetes pills is more important than choosing toothpaste.

MM

"Media Watch" is an occasional column written by Minnesota Medicine's editor-in-chief, Charles R. Meyer, M.D., an internist with Consultants-Internal Medicine in Minneapolis.



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The Compassionate coroner

Janis Amatuzio, M.D., considers advocating for the deceased and comforting families vital to her role as Anoka County coroner.

It was an accidental death—a young construction worker crushed by a truck backing up on the job site at a downtown office building. Police officers, accompanied by a deputy medical examiner, went to a home in south Minneapolis to notify the man's wife. After hearing the tragic news, the young woman replied, "Oh, thank God I kissed him goodbye this morning."

The deputy medical examiner was Janis Amatuzio, M.D., and this was her first experience in relaying tragic news to family members following a death. The widow's response profoundly shaped Amatuzio's attitude and philosophy. "I learned from my very first case that we must treat every case with dignity and compassion," she says. "We are privileged to be part of a family's most difficult and intimate experiences. Families often share their concerns and fears with us; they open up their lives to us. Part of my role is to offer comfort and meaning."

Today, Amatuzio is the appointed coroner for Anoka, Wright, and Meeker counties. She and her staff of eight investigators and other support personnel investigate approximately 1,000 deaths each year. Amatuzio is also committed to educating peers, colleagues, and the general public about forensic medicine. Twice a year she teaches a three-day course, "Anatomy of a Death Investigation," to nurses, death investigators, morticians, and law enforcement officers. Since November 1996, Amatuzio has authored an online column, "The Coroner's Corner" (URL: <http://www.anoka-coroner.com>), designed to "enhance and broaden the knowledge of physicians, attorneys, law enforcement personnel, funeral directors, and others involved in death investigation." Topics range from the risk of contracting HIV during an investigation to interpretations of new legislative statutes.

Daughter of a Doctor and a Nurse

Amatuzio was destined to be a doctor. As a young child, she accompanied her father, Minneapolis inter-

nist Donald Amatuzio, M.D., on house calls and listened to her mother, Verda Amatuzio, a nurse, take phone calls from patients and families. "I can still remember carrying my father's black bag," she says. "When I was a little older, I would go with him to the hospital and play in the doctors lounge. My father had a very profound influence on my life. He loved his work and adored his patients. When I grew up, I wanted to be just like Dad. Throughout my career, my father has been my guide, my friend, and my mentor, and my mother always encouraged me to follow my dreams."

Janis Amatuzio intended to follow in her father's footsteps and build a career in internal medicine. But during her fourth year of residency at the University of Minnesota Medical School, a course in pathology at Hennepin County Medical Center changed her mind. "I was stunned, excited, and wowed by anatomic pathology," she says. "I had three excellent teachers: Robert Anderson, M.D., Cal Bandt, M.D., and John Coe, M.D. They made the work seem so exciting. I had found my niche."

The older Amatuzio encouraged his daughter to pursue her new interest. "He said pathologists were the doctor's doctor. Pathologists answered the questions and solved the mystery of disease," she says. So Janis Amatuzio took a year's sabbatical to become a pathology resident at Hennepin County Medical Center, where her work with Kenny Osterburg, M.D., an assistant medical examiner who loved forensic anthropology, whetted her interest in forensic pathology.

The Diverse Roles of a Coroner

Amatuzio's office is located in the basement of a professional building across from Mercy Hospital in Coon Rapids. She usually arrives at 6:30 a.m. and rarely leaves before 7 p.m. The work doesn't stop on

—◆◆◆◆◆ By Ralph Heussner ◆◆◆◆◆

weekends. "I love my job," she says. "I am continually awed and challenged by the work."

On the coat rack outside her office hang two white lab coats, a brown and yellow jumpsuit with "Anoka County Medical Examiner" inscribed on the back, and a formal business suit. There are days when she wears all three outfits: the lab coat in the morgue, the jumpsuit at the scene of a death investigation, and the business suit during a court case.

In the Lab and on the Scene

A large gray Olympus BX50 microscope forms the centerpiece of Amatuzio's office. Glass specimen slides are scattered over the working areas of the desk. Carousels fill overhead shelves. Folders are lined up along a wall, each representing a case in progress. When asked about the prominence of the microscope, Amatuzio says: "The foundation of every investigation is the pathology. And sometimes you find the critical answer to the mystery in the laboratory."

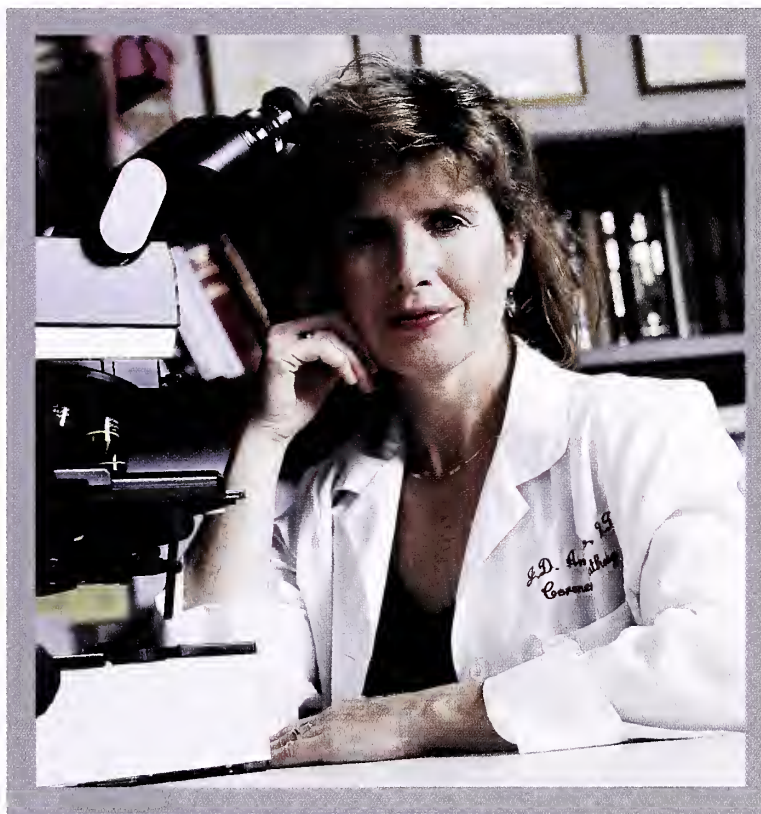
There's another critical asset to an effective death investigator, but it's something you don't learn in a classroom. "I always caution my investigators when they are called to a death scene that their most valuable tool is an open mind," Amatuzio says. "Many times our investigators are requested at the scene of a 'suicide,' 'accident,' or 'natural death.' It is important to let the scene speak to you—in other words, don't jump to conclusions. There are times when I remind myself of the call to a south Minneapolis apparent 'homicide' of a 28-year-old IV drug-abusing prostitute whose bruised body was found wedged behind a bureau in her first-floor apartment. The autopsy revealed purulent meningitis caused by *Neisseria meningitidis*, a bacterial infection that caused hemorrhage in the skin and created the appearance of a homicide," Amatuzio recalls. "Or there was the head-on traffic accident caused by the 56-year-old man who ruptured his abdominal aortic aneurysm. Appearances can be deceptive."

"I have learned through experience that sometimes there is no clear answer," Amatuzio says. "After I have applied all of my intellectual resources and used all of the investigative tools, I will ask my colleagues for advice. But sometimes you are left with a mystery ... and you must learn to live with that."

On the Witness Stand

In criminal cases, the medical examiner provides crucial testimony. There's no formal academic training for this role. One learns through experience and by observing others. "I had the opportunity to study under Garry Peterson, M.D., the chief medical examiner for Hennepin County [see related story, page 14]. He's trained as a lawyer as well as a doctor and is a superb teacher," Amatuzio says.

Amatuzio is not daunted by the adversarial nature of the courtroom, nor intimidated by aggressive attorneys. "Before every case, I spend a few minutes reflecting on the deceased. I say to myself, 'I'm here for you. I will do my best to represent you,'" she says. "As an advocate of the deceased, I am impartial. If an attorney becomes aggressive or belligerent with me, I can stand my own ground."



PHOTOGRAPH BY JOHN NOLTER

Comforter

Amatuzio speaks movingly of the role of the coroner as a comforter. "We approach each case with an attitude of respect, whether it's a 90-year-old person who has died during sleep, or the tragedy of a young child who has died in a terrible accident," she says. "We serve families by explaining the circumstances of



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death. I emphasize that to all of my staff. We call the family, sometimes from the morgue, following an autopsy in all noncriminal cases. I tell my staff that, in this era of managed care, we are in the business of final care."

While Amatuzio's passion for her work appears to be unbounded, she does have a personal life. She is married to a police officer—but they did not meet during a criminal investigation, as one might expect. They were introduced by mutual friends. The couple lives on a farm in Dakota County, where they raise cutting horses.

It's no surprise that Amatuzio's work has influenced her life at the philosophical level. "Although I have been involved with death investigations for almost 20 years, I still find that death is a great mystery," she says. "I live on the edge of the mystery. What I learn about death I try to apply to my life. I have learned to honor life by living each day fully and by respecting the dignity of all life."

MM

Ralph Heussner is managing editor in the Information Division of Mayo Medical Ventures.

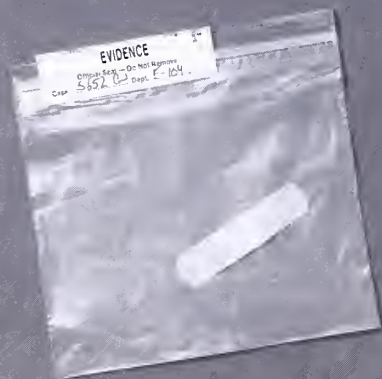


Exhibit A:

Adhesive bandage, which plaintiff alleges defendant pulled rapidly from skin, violently tearing three hairs from plaintiff's arm, which resulted in severe shock, trauma, disfigurement, chronic debilitating pain and permanent psychological damage.

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The telephone rings shortly after dark. Sensing somehow that the call is for me, I answer the phone with only a moment's hesitation. I cover the mouth of the receiver for a moment to confer with my wife. She had few expectations for this night in the first place and gives only a brief sigh when I inform her I will be going out. With our children in bed, I know she will curl up with her journals and undoubtedly be asleep when I return.

THE HOLY SOCIETY

BY JOEL STEIN, M.D.

"I'll pick you up at 9," my caller informs me, and we disconnect. Once again I ask myself how I ever became involved in this sort of a thing, but I accept my responsibility, and await my ride. I spend the brief wait cleaning up the kitchen after dinner, a seemingly endless task, but one that is comforting in its lack of emotional or intellectual demands. My ride appears

at the stroke of 9. I grab a jacket and am off.

The mood in the car is subdued, though not somber. My two companions and I engage in small talk, reviewing the status of our families, jobs, and vacation plans. We arrive at the funeral home, its windows dark, and let ourselves in.

The chit-chat abruptly ends, and we set about our assigned tasks. We are members of our local Chevra Kadisha, literally the "Holy Society," one of many such voluntary groups in Jewish communities around the world. The Chevra's sole purpose is to perform ritual preparation of the deceased prior to a traditional Jewish burial ceremony. We serve any member of the community when requested by the family, regardless of affiliation or circumstances of death.

Both men and women participate in the Chevra, with male members preparing men for burial, female members preparing women. Tonight we have been asked to prepare this recently deceased man prior to his funeral the next morning. Jewish tradition dictates that burial take place as soon as possible after death—generally the next day—hence the short notice we received. The preparation is guided by the fundamental premise in traditional Judaism that the deceased should be treated with utmost respect at all times. Based on this, we are not to discuss mundane or extraneous matters while performing our duties, and perform them quietly and steadily. This respectful approach is second nature to me now, though I am disturbed to recall that I did not adopt this attitude in my medical training, but only once I joined the Chevra Kadisha.

The process of preparing the deceased varies somewhat from community to community, but the basic format is well-established by long tradition. First, we perform a ritual handwashing, followed

by a brief prayer. We then wash the deceased. We perform this sponge bath with as much care as bathing any incapacitated person, perhaps even more gently because the deceased cannot assist. I cradle the head when the deceased is turned on his side, while my partner washes the back. Abrupt, jarring movements are carefully avoided. We maintain the modesty of the deceased at all times with a towel covering the genitalia. As we begin to wash the deceased, I cannot help but silently consider the cause of death. Are there any telltale scars suggesting a prior coronary artery bypass graft? Cachexia to indicate a malignancy? Defibrillator paddle burns to indicate a failed attempt at resuscitation? My silent visual autopsy is quickly concluded, however, with my speculations unanswered. I mentally chide myself for allowing the distraction and restore my focus to the sanctity of the task at hand. While we wash the deceased, however, my restless mind draws comparisons to my experiences in my medical student anatomy lab. Although we were instructed to "respect the dead" by our professors, we instead engaged in morbid humor and kept our emotional distance throughout the experience. While some of our behavior may have represented emotional immaturity, it seems that the medical subculture did not reinforce our instructors' weak admonitions.

Trying harder to keep my mind from wandering, I concentrate on my responsibilities, focusing on the mechanical task of cleaning under the fingernails and toenails after the sponge bath has concluded. Having completed the washing, we lower the deceased into a Mikveh, a bath for ritual purification. Finally, after we have carefully dried the deceased, we dress

him in a traditional plain white linen shroud, place him in the casket, then wrap a prayer shawl around him. Traditionally, there is no viewing. Before we close the casket, I pause for a moment, consider the deceased, and wonder, Who was this man? Did he live a full life? Who mourns him? Is he at peace?

Our task complete, we ask for forgiveness from the soul of the deceased, for we know that despite our best efforts, we have not remained entirely pure of thought and deed during the hour we have spent in the process of preparation. We leave the deceased in the company of another member of our community, the Shomer (literally, the "watcher"), who will remain overnight to recite psalms while maintaining the traditional vigil until the burial.

The ride home is brief, but a spirit of satisfaction mingled with relief fills the car. The conversation is

HOLY SOCIETY continued on page 47



ILLUSTRATION BY NICHOLAS WILTON

Appointment With Death



A TEAM OF FIRST-RATE DETECTIVES APPLIES UNUSUAL TOOLS OF THE TRADE TO ESTABLISH THE WHEN AND HOW IN DEATH INVESTIGATIONS.

BY JONATHAN KALSTROM



PHOTOS BY KEVIN WHITE

Like any good detective, Garry Peterson has a keen eye for detail. When he arrived at the home of a deceased elderly woman just discovered by a neighbor, police asked, "When do you think she died?"

"This morning," Peterson answered without hesitation before examining the body. He explained to the stunned police officer: "The weights on the cuckoo clock were recently reset—they've dropped only a couple inches." Unless someone else reset them after arriving at the scene, the woman had most certainly died that morning.

Garry Peterson, M.D., J.D., is a physician sleuth. His job is to solve mysteries, but he's not your typical detective. He's Hennepin County's chief medical examiner, and his job is to determine when and how a person died: heart disease? accidental electrocution? suicide? homicide?

Frequently, Peterson's sixth sense leads to the discovery of crucial evidence. Take, for example, the time Peterson arrived at the scene where a man had apparently shot himself in the chest. A friend told police the man was depressed and had committed suicide. But something didn't seem right. "The gun was so beautifully tucked into the palm of his hand, and his finger was carefully wrapped around the trigger," says Peterson. "Something was discordant about it. Knowing how gravity works, and how people lose voluntary control, it didn't seem possible he could have kept that grip. Also, he died from a chest wound—people don't usually die right away from chest wounds."

Given Peterson's concerns, police questioned the

friend, who quickly conceded that he had fired the deadly shot.

"Sometimes intuition can have a big impact on resolving a case," says Peterson, who's a 28-year veteran at this, 15 years as chief medical examiner.

Peterson leads a team of four physicians who work as medical examiners for Hennepin County and approximately 12 nonphysician death investigators who assist them. The medical examiners are trained in forensic pathology, a curriculum that includes a year of either research or clinical training and four years of general pathology after medical school. Not all their work forms the fabric of a Patricia Cornwell novel, in which fictional coroner Dr. Kay Scarpetta cracks unusual murder cases. Many of their tasks are more mundane—signing death certificates, performing autopsies, approving cremations, and testifying in court about cause and time of death. Of the 3,226 cases reported in 1997, Peterson's office signed death certificates for 1,403; 70 cases were homicides.

Most of the cases Peterson's office handles are natural deaths in which there is no attending physician who can certify the death. But in reality, natural deaths can be tougher to identify than homicides or suicides. "The gunshot wounds, stab wounds, self-inflicted incise wounds of the wrist, hangings, and so on are, most of the time, pretty clear-cut," says Peterson, the only physician in Hennepin County who can sign a death certificate in the case of accident, suicide, or homicide. In fact, identifying a natural death may require as much detective work as investigating a homicide.

Consider this example: A woman brings her 58-

year-old neighbor a pie she just baked. When the neighbor doesn't answer the doorbell, she peers in the window and sees him slumped at the kitchen table. She calls the police, who contact the medical examiner. Peterson discovers at the scene that the man lived alone, had been divorced for many years, and took an early retirement. Outside, Peterson notices the lawn has been freshly cut—wet chunks of grass rim the sidewalk. The man is dressed in shorts and white tennis shoes with grass stains, and his face is congested. Before him is a drinking glass, sweating from ice water. The temperature is 90 degrees.

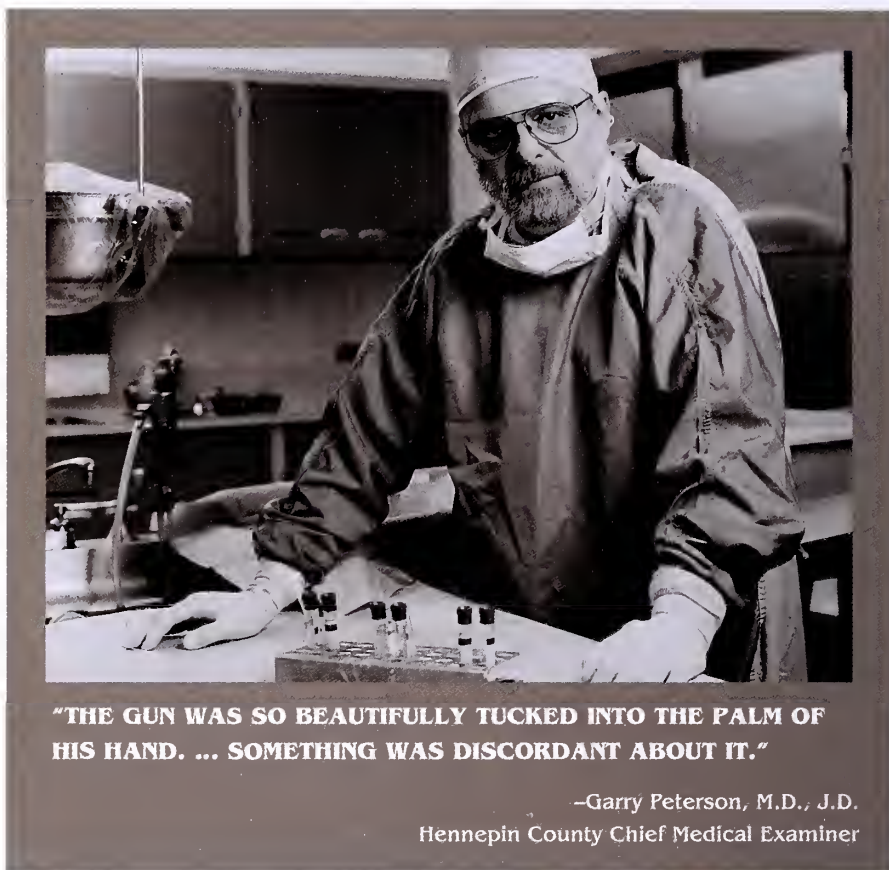
Continuing the investigation, Peterson finds an unfinished bottle of penicillin dated 18 months earlier in the medicine cabinet. He calls the physician, who says she had last seen her patient a year and a half ago, when she prescribed the penicillin for a respiratory problem. The patient's blood pressure had been up, his stamina down, and she encouraged him to take a stress test. He wanted to think about it. Peterson goes back to work, examining the body externally for injuries to ensure there wasn't foul play. He then weighs all the evidence and concludes the culprit was heart disease.

When investigating deaths, Peterson and his staff look for clues in many places. The decedent's medicine cabinet often reveals possible ailments and provides the names of attending physicians, says Hennepin County Assistant Chief Medical Examiner Kathryn Berg, M.D. Medical examiners also question family members and friends, who often can reveal the person's social history and circumstances surrounding death.

"Sometimes we go through the garbage, particularly if the scene suggests overdose of a prescription medication and we can't find one in the house," says Berg. "In suicide cases, family members

sometimes clean up the scene to hide evidence—maybe to protect the decedent's reputation."

Medical examiners will even go through the refrigerator. "The dates on milk cartons might suggest how long the person has been dead," says Peterson.



"THE GUN WAS SO BEAUTIFULLY TUCKED INTO THE PALM OF HIS HAND. ... SOMETHING WAS DISCORDANT ABOUT IT."

—Garry Peterson, M.D., J.D.
Hennepin County Chief Medical Examiner

And you can surmise a lot about people from their diet. "Does the refrigerator contain food from all the food groups, or just leftovers from a fast-food place covered with mold? An empty refrigerator may mean the person was suffering gastrointestinal problems; or maybe he was depressed and turned off by food or had no motivation to shop," says Peterson. Of course, sometimes there's an explanation: Maybe the decedent ate dinner each night with Mom, who lives in the apartment across the hall. Nonetheless, the refrigerator suggests questions to ask, says Peterson.

One of the frustrating aspects of a medical examiner's job, notes Berg, is when the office can't determine the cause of death. "We've had cases involving young

people—under age 30—who have collapsed and died. The autopsy shows nothing—no signs of heart problems—and the toxicology lab finds no signs of drugs in the body.”

In some of these cases, she says, family members have decided to be checked by a physician, revealing genetic heart defects such as Wolff-Parkinson-White syndrome or prolonged QT interval syndrome—abnormalities that wouldn’t show up in an autopsy.

Sometimes the manner of death remains undetermined. Peterson cites an example: A man is found dead in his garage, in the car. The engine is running, as is the car’s CD player, piercing the silence of the

evening. On the surface, it looks like an obvious suicide. But the medical examiner is bothered by the case. The man had been drinking. Did he keep the car running to listen to the end of a song and then pass out from the alcohol, resulting in carbon monoxide poisoning? Or was it intentional? After reviewing all the information, such as toxicology tests, an autopsy, and microscope slides, the medical examiner still finds no conclusive manner of death. It is listed as “undetermined.”

Occasionally, someone comes forward with a critical piece of information that cracks the case. About a year ago, a man died in an art studio in

THE RURAL CORONER

The use of medical examiners and coroners across the United States is idiosyncrantic.¹ Some states rely on one or the other, while some use both. In most states, coroners are elected laypeople who rely on whatever medical personnel are available to assist in investigations and perform autopsies, while medical examiners are usually physicians and pathologists who are appointed and have special training in performing medicolegal death investigations and forensic autopsies.

Each of Minnesota’s 87 counties has either a medical examiner or a coroner, and there’s not much difference between the work of the two in this state, says Garry Peterson, M.D., J.D., Hennepin County chief medical examiner. In the early 1960s, Minnesota began to require coroners to have medical training in a variety of areas, such as surgery and pharmacology—although the coroners already working were exempt from the new requirements. Several nurses have become coroners in recent years, but most of the state’s coroners are physicians. In Minnesota, most coroners are appointed, not elected.

The job of outstate coroners differs in several respects from the work of their urban colleagues. For one, their duties are usually part time. Michael R. Busian, M.D., Stevens County Coroner, usually has coroner duties once or twice a month. And as a rural coroner, he is less likely to work on cases involving violent altercations.

“I don’t recall that we’ve had a documented homicide for many many years in Stevens County,” says Busian, who has served as the Stevens County coroner for more than 20 years. “As a coroner here, my duties are really less of a forensic pathologist and more of a physician investigator with a special interest. I am not a pathologist. If I need to have forensic work done, I send the laboratory tests to a forensic lab, and I send the body out for a medical/legal autopsy.”

The types of cases that Busian usually sees are deaths from accidents or medical conditions. Some deaths are caused by motor vehicle accidents, but most are the result of hunting, industrial, or farm-related accidents. While Busian’s work as a coroner is part of his vocation, it is also his avocation. “It wasn’t just a duty here,” he says. “It’s an aspect of medicine that interests me. It keeps my practice varied so that I don’t become unidimensional in my thinking and my scope of practice.”

In fact, Busian wears many hats: he is medical director of the ambulance, medical director of a nursing home, and a family physician with Prairie Medical Associates in Morris. “I’m interested in almost all facets of medicine,” he says.

REFERENCE

1. Hanzlick R, Combs D. Medical examiner and coroner systems. *JAMA* 1998;279(11):870-4.

southeast Minneapolis. The medical examiner found no obvious clues about the cause of death but discovered a dead cat at the scene. "It's unusual to find more than one person—or animal—dead at the scene when there's no outward signs of injury," says Berg.

An autopsy on the cat at the University of Minnesota veterinary lab showed no injuries, and the autopsy and toxicology tests on the man revealed nothing. Fortunately, someone informed the medical examiner that a fumigant pesticide, methyl bromide, had been used in an adjacent building. Sure enough, tests showed high levels of a component of the deadly pesticide in the man's body. Standard tests wouldn't have uncovered the accidental poisoning—toxicologists need to know what they're looking for to detect such poisonings.

Another aspect of the medical examiner's role is testifying in homicide cases: "Based on what you found at the scene, and based on your expertise, do you have an opinion on the cause of death?" or "Are the wounds you saw consistent with this knife, wound exhibit B?" are the type of questions asked of medical examiners. Peterson says his law degree helps him understand court proceedings and predict the questions he will be asked. Although he never has and never plans to practice law, his knowledge is useful both inside and outside the courtroom.

Over the years, Peterson has observed that television dramas have affected his job, especially shows like the old "Quincy" program about a medical examiner who helped solve murder mysteries. "Nothing has raised the expectations of our office more than those types of programs," he says. For example, Quincy would give very specific times of death, like 3:00 to 3:15 in the afternoon. "This increased the show's drama, but in reality, we can only pinpoint death to, maybe, the later part of the day. But there's a built-in expectation that we'll have specific answers," says Peterson. "The 'Quincy' show was both a boon and a bane to us. It brought an appreciation of what medical examiners do, but it also raised expectations too high."

PARTNERS IN SOLVING THE PUZZLE

Medical examiners and coroners work with a wide array of professionals in some behind-the-scenes specialties, such as forensic odontology, toxicology,

entomology, and forensic anthropology. "Sometime the information we ascertain is not the final word," says Berg. "We rely on others to provide us with answers."

The ballistics expert—a radiologist

Internationally recognized ballistics expert Jeremy J. Hollerman, M.D., a radiologist and assistant chief of



"IN MANY CASES YOU CAN FIGURE OUT THE DIRECTION, ANGLE, AND PATH OF THE BULLET."

—Jeremy J. Hollerman, M.D.
Assistant Chief of Medical Imaging, HCMC

the Medical Imaging Department at Hennepin County Medical Center (HCMC), also lends his expertise to the Medical Examiner's Office. About once or twice a month, Hollerman is called in on a case—often involving a gunshot wound. In many cases, the path of the bullet can be traced through x-rays. Technologists in Hollerman's department take x-rays of the corpse in the morgue, and Hollerman reviews them. "Sometimes the medical examiners review those x-rays themselves and are satisfied with that, but if they have additional questions, they often bring them to me," says Hollerman, who is also an assistant professor of radiology at the University of Minnesota.

In one case, an x-ray showed more projectiles than physicians could find in the body. "We had a discrepancy we just couldn't figure out," says Peterson. "It looked like there was a bullet where there wasn't

one." Hollerman looked at the x-ray and discovered a ghost-like double exposure on the film. "If Hollerman hadn't been there, I'd probably still be looking for that bullet, five or six years later," says Peterson.

Gunshot investigations are an academic pursuit for Hollerman, not the mainstay of his job. He became involved in the specialty while running a level-two trauma center in Saginaw, Michigan. "I thought I should know something about gunshot wounds," he says. While studying the subject, he discovered the work of ballistics expert Martin L. Fackler, M.D., whom Hollerman says debunked a lot of the popular myths about wound ballistics (e.g., the myth that the bullet's kinetic energy determines the characteristics of the wound produced). Eventually, he and Fackler started working together and wrote a series of papers. Hollerman later adapted the study of wound ballistics to radiology and medical imaging.

People from around the nation call Hollerman with questions on the subject, and he regularly corresponds with investigative agencies, including the FBI and Interpol.

The entomologist

To determine the time of death, a medical examiner may call a forensic entomologist, such as Valerie Cervenka—who focuses on homicide. If a body is dumped outside, insects are attracted to decaying animal tissue, human or otherwise, Cervenka says. The blowfly is the most important in determining time of death because it is the first at the scene. She estimates time of death based on the blowfly's life cycle. This insect mates on the body, and the females begin to lay eggs within several hours.

After several days, the decomposing body is no longer optimal for egg laying, and the flies go elsewhere. By this time, the maggots, the larval form of the blowfly, are feeding throughout the body. The insect progresses from egg to maggot to pupa, and finally to adult. The length of each life cycle tells Cervenka how long the dead body has been in that spot.

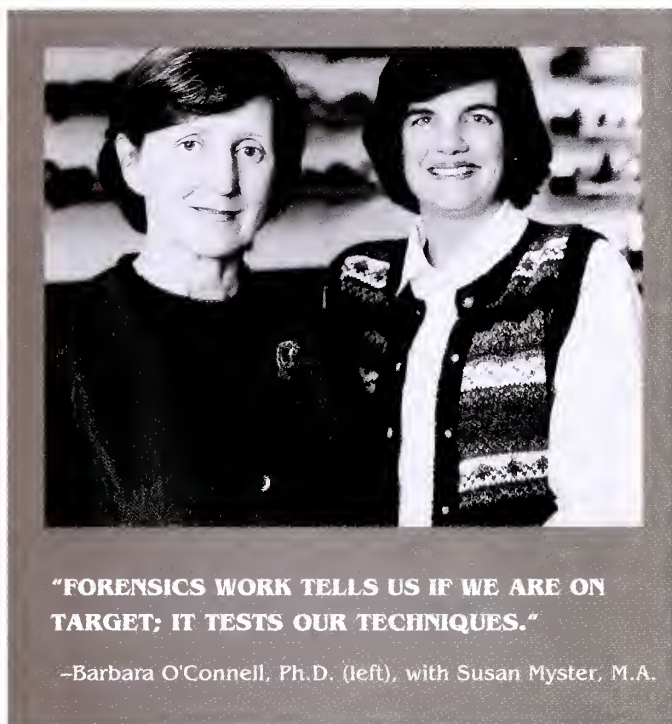
"By knowing that the black blowfly, for instance, takes, let's say 10 days to develop at 85 degrees, and it's on the body as a later-stage maggot, I just work backwards from that to find out when the blowfly probably laid the egg," Cervenka explains.

Cervenka, whose background is in livestock entomology, became interested in forensic entomology when she attended a symposium on the subject at a national meeting of the Entomological Society. "I was just fascinated," she says. As far as Cervenka knows, she is the only board-certified

forensic entomologist in the five-state area—and she is the only woman with the title in the nation (seven men are certified in the field).

The anthropologists

When a human skeleton is found, the medical examiner might consult forensic anthropologists Barbara O'Connell, Ph.D., an anthropology professor at Hamline University in St. Paul, and Susan Myster, M.A., assistant professor and director of the forensic sciences certificate program at Hamline. By inspecting the bones, they can determine the person's sex and approximate age, possibly determine ethnicity, and sometimes find evidence of trauma that suggests cause of death. Their consultant work tends to pick up pace in the fall, when hunters sometimes stumble across decomposed bodies that have been left in the woods.



"FORENSICS WORK TELLS US IF WE ARE ON TARGET: IT TESTS OUR TECHNIQUES."

—Barbara O'Connell, Ph.D. (left), with Susan Myster, M.A.

In one well-known case, the Bureau of Criminal Apprehension, following a lead, had uncovered the remains of what they thought was an 80-year-old man buried in the backyard of a Minneapolis home. O'Connell and Myster's skeletal-aging techniques, which involve analyzing the pelvic bones, showed that the remains belonged to a much younger person, probably in his 30s. Investigators continued digging, discovering the remains of two bodies, one of them the 80-year-old they had expected to find. O'Connell and Myster also found evidence that the bodies had been dismembered.

O'Connell and Myster can also help identify unknown individuals. In one case, a decomposed body was uncovered in the Mississippi. Because experts thought the body had been in the river longer than it really had been, the family did not come forward, assuming the victim was someone else. O'Connell and Myster provided information about the person's body size, build, sex, age, and race, and a forensic artist did a drawing of the person's likely appearance, which led the family to identify the body.

O'Connell says she likes the mystery involved in her work and the chance to help others. "It's gratifying to resolve cases of missing people, closing painful situations for families," she says.

Most of her anthropology work deals with ancient populations, so she never knows for certain if she's right. "Forensics work tells us if we are on target; it tests our techniques."

Hamline's forensic sciences program has an educational exchange with the Hennepin County Medical Examiner's Office. Physicians training in forensics have taken Hamline's month-long forensic anthropology course, and Hamline students

have done semester internships at the medical examiner's office.

The odontologist

Sometimes a medical examiner requires the services of a forensic odontologist, like Ann L. Norrlander, D.D.S., a Minneapolis dentist in private practice who does forensic work evenings and on weekends. She handles cases of all sorts, including analyzing bite marks to match an injury to a possible assailant, but most of her work involves identifying bodies through dental records or unique dental features.

When Norrlander works as a consultant in such cases, she usually receives the dental records of an individual to determine if the x-rays match the body. Sometimes, though, Norrlander may aid an investigation just by looking at the teeth. In a recent Ramsey County case, Norrlander noted some distinguishing features of the individual's teeth. Several lower front teeth were missing, and it looked as though the person had experienced a facial injury, probably within the last few years. Two teeth adjacent to the missing teeth showed a large abscess, but there were no fillings on those teeth. In fact, the deceased had no fillings or signs of

restorative work at all, and the wisdom teeth were intact. Norrlander surmised that a traumatic injury probably caused those two teeth to die.

Investigators had a tentative ID on the deceased but needed to verify it. "I told investigators, 'You may not find dental records, but you may possibly find a hospital skull film,' " Norrlander recalls. In addition, the deceased had a baby tooth in the area of an upper cuspid. So Norrlander also told investigators that if they couldn't find dental x-rays, to ask the family for a photo of the person smiling, because any picture taken from about age 14 to the present might show the baby tooth.



"I'VE ALWAYS LOVED A GOOD MYSTERY ... IT'S SEEING A DIFFERENT SIDE OF LIFE THAN I SEE DAY TO DAY."

—Ann L. Norrlander, D.D.S., odontologist

No degree is offered in forensic dentistry, but the American Board of Forensic Odontology offers certification in the field. Students must complete required coursework and a minimum of 25 identifications, as well as three bite mark cases. They must also pass a written and oral exam. There are about 100 certified forensic dentists in the United States; Norrlander is the only one in Minnesota. Why does she do it?

"I've always loved a good mystery, and it's puzzle solving, problem solving—it's seeing a different side of life than I see day to day with my family, friends, and patients," Norrlander explains.

The toxicologist

Hennepin County medical examiners meet weekly with toxicologists from HCMC to determine whether a death could be drug or alcohol related. Peterson and his staff present new cases, and the toxicologists discuss results from their week of work. In a typical case, the lab might quantitate levels of a tricyclic antidepressant in a body to determine whether the person may have intentionally overdosed or whether he or she was taking therapeutic amounts of the prescription drug.

Occasionally, a case presents an unusual twist. "Take, for example, the case of one elderly woman who had been living alone," says Fred Apple, Ph.D., director of HCMC's toxicology laboratory. "The lab results showed high levels of ethanol in the woman's blood, but the family insisted she never drank." Apparently, Grandma had a secret drinking habit. "Investigators found ethanol hidden in her home—poured into medication bottles in her medicine chest," Apple says.

DEALING WITH DEATH

How do medical examiners and other forensics experts deal with death every day? "I don't know that it ever really becomes routine, but you learn to distance yourself in some important ways," Peterson says. A person reading in the newspaper about an industrial accident is apt to think about how tragic it is—the children who won't have a mother anymore, the stress on the family. "We tend just basically to block those [thoughts] out, not to dwell on them," Peterson explains. "Not that we aren't sensitive to it, and not that we won't wince when the thought crosses our mind, but you learn to not distract yourself with it because you can't."

Some cases do stand out in Peterson's mind. A number of times every year, Peterson or his staff will meet with the family of a decedent. The medical examiner may have signed the death certificate as a suicide, and the family feels the death should be declared an accident. "You learn a little bit more about the person than you do

in the normal course of investigating a case, and you remember those," Peterson says. "You're going to be touched by those cases to some extent."

Peterson emphasizes that the [work of medical examiners] is the practice of medicine and the decedents are their patients. "We really do feel that there's a doctor-patient relationship," he says. "It's amazing how sensitive and reverent people are [in this office]."

Medical examiners learn to separate their work and personal lives, says Peterson. "We can read the Dilbert strip in the morning, and chuckle about it, and then turn to something that really is sad and tragic and work within it." It is a special ability. "One of the things I've said about people in forensic pathology and who work here is, 'We're normal, we're just not average.' "

MM

Jonathan Kalstrom is a Minneapolis-based free-lance writer who specializes in law, business, and trade publications. Minnesota Medicine Associate Editor Susan Rodsjo contributed to this story.

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910 EAST 26TH STREET, MINNEAPOLIS, MN

The Unfortunate Decline of the AUTOPSY

Errors in diagnosis, inaccurate vital statistics, undiagnosed contagious diseases, and unrecognized emerging infections are all potential consequences of the autopsy's demise, argues this pathologist.

By Seymour Handler, M.D.

"To investigate the causes of death, to examine carefully the condition of organs, to apply knowledge obtained to the prevention or treatment of disease is one of the highest objects of the Physician ..."

—William Osler

"You may take notes for 20 years, attend the sick at the bedside from morning to night, and all will be to you only a confusion of symptoms, a train of incoherent phenomena. Open a few bodies, the obscurity will disappear."

—Marie François
Xavier Bichat,
(c. 1800)

In an era of sophisticated medical science, we have witnessed a dramatic decline in the number and percentage of autopsies performed. Some observers might conclude that this apparent paradox is perfectly understandable; that is, we now know so much about a patient's disease during life that the autopsy provides no additional information and is, therefore, an unnecessary chore. Fortunately, most observers of the subject have come to a different conclusion; namely, autopsies are important, but several societal and medical attitudes have caused their decline.

Data from hospitals around the nation have clearly documented a decline in autopsies. Medical school teaching hospitals, which formerly performed autopsies on 80 percent to 90 percent of patients who died in the hospital, now have rates lower than 25 percent. The Veterans Affairs Medical Center in Minneapolis, which autopsied 90 percent of deaths in the 1960s for average annual totals of 500 autopsies, now averages fewer than 100 autopsies annually. North Memorial, where I practice, has witnessed a similar decline; the percentage has dropped from 60 percent (almost 300 postmortems) in the 1960s to less than 10 percent (80 postmortems) in recent years (see the figure, page 24). Many of the recent autopsies are for stillborn or neonatal deaths. Not only has our percentage in absolute numbers dramatically decreased, but because our current patient volume is several times that of an earlier era, the numbers are even more significant.

Many authorities, particularly pathologists, have decried the decline and have offered explanations and suggestions for reversing the trend. I believe the decline dramatically reduces quality of medical care. For one, clinicians who err in diagnosis continue to do so. Second, vital statistics based on death certificates become increasingly inaccurate. Third, undiagnosed contagious diseases are missed, and new diseases or iatrogenic diseases are not recognized; the exotic infections secondary to immunosuppression might remain unknown. Finally, training of medical students and pathology residents is hampered.

Perhaps a review of the historical role of the autopsy in medical science may shed some light on my concerns.

History of the Autopsy

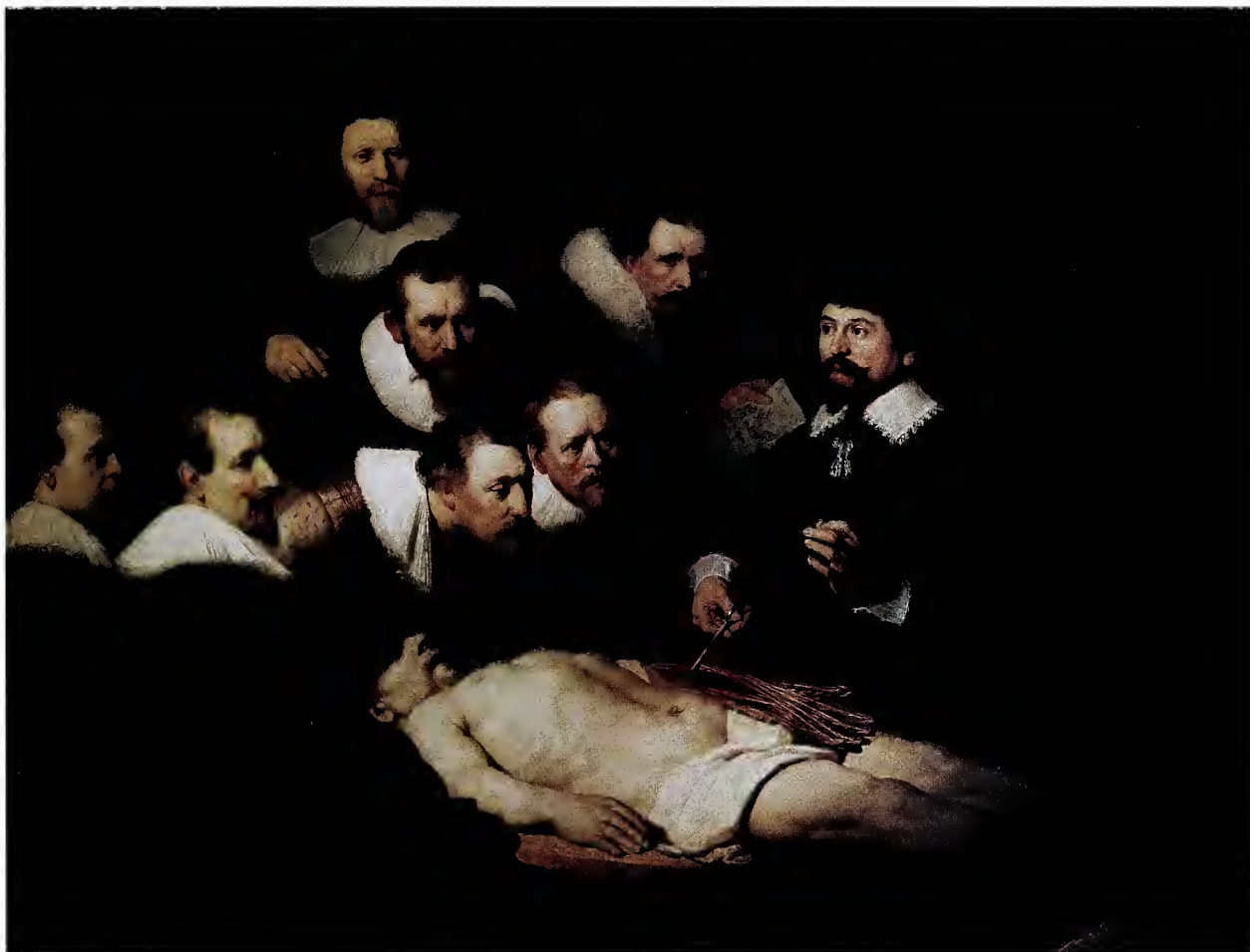
Although the classical Greek physicians performed autopsies, they were primarily interested in anatomy from a purely intellectual standpoint and made no attempt to correlate gross pathology with clinical disease. This gap persisted from the time of Greek physician and writer Galen (Claudius Galenus), c. A.D. 130 to 200, through the Middle Ages. It took 1,500 years to disprove and reject Galen's teachings. His reputation was so overwhelming that his incorrect notions of disease endured for over a millennium.

During the early 1700s, Italian anatomist and pathologist Giovanni Battista Morgagni (1682-1771) correlated anatomic findings at postmortem exam with clinical symptoms. Other memorable physicians of that era include Englishmen Richard Bright (1789-1858), who discovered Bright's disease (the chronic

form of glomerulonephritis) and William Harvey (1578-1659), who discovered circulation of the blood; Italian anatomist Gabriele Fallopius (1523-62), who discovered the fallopian tubes; and Flemish anatomist Andreas Vesalius (1514-64), who founded the modern science of anatomy. These physicians all made their contributions to medical science by performing autopsies.

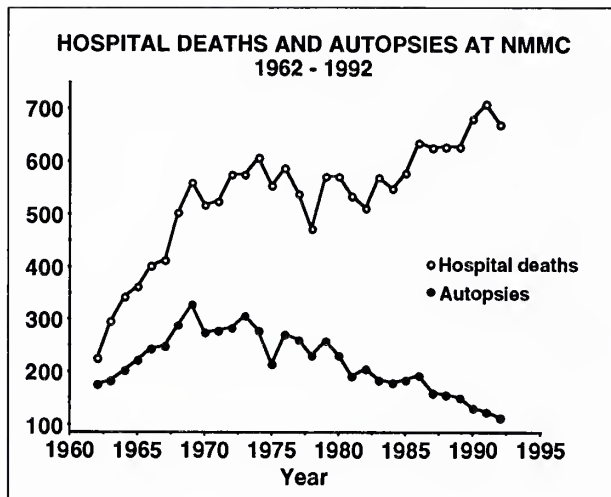
A particularly important gain in medical knowledge occurred late in the 19th century in Vienna. Working at Austria's Allgemeine Krankenhaus, Czech pathologist Karl Freiherr von Rokitansky (1804-78) performed or supervised 70,000 autopsies over a 50-year period, laboriously correlating gross anatomical findings with clinical disease (together with the Czech-born internist Josef Skoda, 1805-81). Soon after, in 1858, German physician Rudolf Ludwig Karl Virchow (1821-1902) published "Cellularpathologie," overthrowing humoralism and marking the beginning of modern pathology.

Early in the 20th century, the great Canadian



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"The Anatomy Lesson," by Rembrandt.



Figure

physician William Osler (1849-1919) performed autopsies on 1,000 of his patients, eloquently relating the findings to clinical disease. Osler's work at Johns Hopkins University was considered a major stimulus to the Flexner report published in 1910, which led to the current science-based medical education and correlated bedside teaching with pathology.

The autopsy has been considered the major source of scientific medicine, enabling physicians to describe and classify thousands of diseases. Virtually the whole of modern medical knowledge was created through the study of autopsies. Prior to the Flexner report, the most competent physicians were those who performed autopsies; clinical medicine was archaic and without substance. For example, it was not until 1912 that physicians James Herrick and Ludvig Hektoen described the relationship between coronary thrombosis and myocardial infarction. What previously was considered an inflammatory disorder, chronic myocarditis, was demonstrated to be of vascular origin. Where would PTCA and CABG surgery be without this basic knowledge?

Reasons for the Decline

Both clinicians and pathologists have contributed to the decline in autopsies. Clinicians maintain that the autopsy is inefficient, irrelevant, and unnecessary because of the proliferation of modern diagnostic tests. Pathologists have argued that it is time-consuming, disagreeable, thankless, and ineffective in changing physician behavior because of clinician disinterest. Next of kin consider the autopsy disagreeable and mutilating, and hospital administrators complain about the cost. Another contributor is the 1971 decision by the Joint Commission on Accreditation of Hospitals to no longer require a 20 percent autopsy rate for hospital accreditation.

As a pathologist myself, I am embarrassed that physicians in my specialty have demonstrated little enthusiasm for the autopsy, partly because the action and money are in surgical and clinical pathology. And clinician disinterest because of overconfidence in modern diagnosis is unjustified. Repeated studies have shown that the percentage of discrepancy errors between premortem and postmortem diagnoses has been constant since 1930.

Conclusion

The major consequence of the autopsy's decline is diminished quality of care. The autopsy has been described as the ultimate "outcome" measure of medical care quality, far better than "process" measures, such as length of stay or cost. The high rate of pre- and postmortem discrepant diagnoses will not be recognized. In addition, continuing education is compromised. The autopsy serves as a source of morbidity and mortality conferences, CPCs, morgue rounds, and medical student and pathology resident education.

The inertia that has occurred these past several decades in obtaining autopsies should be corrected. Depending on the nursing service, chaplain, or on-call residents to obtain autopsy consent from next of kin is fruitless. Because families will more likely give consent if the attending physician expresses an interest and explains the importance of the autopsy, physicians should take a more active role in discussing autopsies with families.

Given that autopsies are an intrinsic part of quality control of care, I encourage physicians to usher in their renaissance.

MM

Seymour Handler is a pathologist with North Pathology Associates in Robbinsdale, Minnesota.

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Adolescent Homicide

No Quick Fixes

As juvenile homicide rates rise, fearful politicians and the public call for harsher penalties. But will the punitive approach address the deeper cultural and psychological causes of violence?

Charles McCafferty, M.D.

Cast a cold eye
On life, on death
Horseman, pass by!

—William Butler Yeats

On the eve of his 17th birthday, John killed his father at home with a single shot from a deer rifle. He then ran away from the scene. A few minutes later, after hearing ambulance sirens, he flagged down a police car and gave himself up. John had no history of violent behavior or drug abuse. He was smart and came from a middle-class family.

- A 16-year-old boy entered a convenience store, flashed a knife, and asked the clerk, a 21-year-old woman, to give him money from the till. She didn't take him seriously and laughed at him. He impulsively stabbed her to death.

- A 12-year-old girl shot her stepfather and ran over him in a car. She then dragged him into the house, which she set on fire. She had no history of aggressive or delinquent behavior.

The dynamics of murder have intrigued us since the dawn of civilization—since Cain slayed Abel. In recent years, headlines have focused on younger and younger children involved in frightening, apparently senseless killings of both peers and parents.

According to the U.S. Department of Justice, 3,200 individuals under age 18 were arrested for murder and nonnegligent manslaughter in 1990, a 60 percent increase from 1981. Males accounted for 95 percent of those arrested. Most victims of juvenile violence are juvenile peers; homicide is the most common cause of death among black males in this age group.

In the past, the judiciary system treated juvenile offenders differently than adults. Courts recognized developmental issues—that a young person's personality was forming, not formed; that adolescents had an ability, unlike most adults, to grow quickly emotionally, just as they could physically; that an adolescent's brain was not fully developed. But the pendulum has swung away from this enlightened attitude. Many legal and medical profes-

sionals today believe that if a 12-year-old commits murder, he automatically becomes an instant adult. Serious juvenile offenders now are often certified as adults; if convicted, they may be incarcerated in an adult prison from age 16. In some states, the laws are even more punitive. And, in the past decade, the U.S. Supreme Court has approved the execution of adolescents age 16 and older.

At present, an almost lynch-mob mentality prevails. In an informal national survey of jurors about a year ago, 60 percent of respondents said individuals should be subject to the death penalty starting at age 10. According to New York Supreme Court Judge Michael Corriero, J.D., children involved in criminal behavior are no longer seen as children but as comic book villains. "They've been called 'superpredators,'" he says. "Once we demonize them this way, it becomes easier to incarcerate them in adult jail."¹

Politicians sense their constituents' fear and sometimes exploit it. Recently an amendment was tacked onto a bill in Congress lowering the age at which courts could consider adolescents as adults to 14. As a side effect of managed care, more and more adolescents are ending up in correctional units instead of medical specialty treatment units. Correctional institutions are packed tight and overflowing, while psychiatric hospital and residential treatment programs are often half empty.

Despite a world of widely varying approaches to crime and capital punishment, almost all nations across the globe disavow the death penalty for juvenile offenders. Only five countries, including Iran and Iraq, advocate the death penalty for juveniles. Among these few, the United States appears to be the leader.

Many people justify the juvenile death penalty by citing Genesis 9: "Whoso sheddeth man's blood, by man shall his blood be shed." But in Genesis 4, capital punishment was not inflicted on the first killer, Cain: "And the Lord said unto him, therefore whosoever slayeth Cain, vengeance shall be taken on him sevenfold. And the Lord set a mark upon Cain, lest any finding him should kill him. And Cain went out from the presence of

the Lord and dwelt in the land of Nod, on the east of Eden."

Most of the approaches that are advocated to deal with juvenile crime—metal detectors in schools, bans on guns, a war on drugs, more punitive penalties—treat only the symptoms of violence. Certainly, most adolescent homicides are carried out with guns, and guns are a pervasive part of our culture. It's sobering to note, however, that in Switzerland, where every man keeps an automatic weapon at home as part of a militia, the homicide rate is a small fraction of that of the United States.

Is it rational to believe that the punitive approach will work? Are we looking deeply enough at the malaise of violence in our midst? Should we be looking more carefully at psychological, cultural, and educational issues?

Probably the most dangerous mammal on the planet is the adolescent male, whose increasing physical strength and testosterone may outpace emotional maturation and impulse control. An element of truth that many people find difficult to accept is that men are by nature aggressive. In some societies—including modern-day gangs—a rite of passage into adulthood required an adolescent to kill an animal or even a member of an enemy tribe. As a rule, man's cruel aggressiveness waits for some provocation. War and sudden cultural changes and upheavals may bring out the worst in us. The atrocities of the world

wars and the recent massacres in the Balkans and Africa attest that *Homo homini lupis*—man is a wolf to man.

In this century we have come to sanitize death. The average adolescent rarely sees a person dying. Grandparents are moved to nursing homes, and children rarely experience a death in the family at home. Even at funerals, if a child is allowed to attend, the grandparent is made up so he or she does not look dead.

On television, killing and violence are sanitized and odorless and dissociated from a child's daily life. In electronic games, figures on the screen explode and die—rewind and they are alive again. Adolescents in the past experienced warfare at close quarters, with its anguish, blood, screams, and smell. Now, even warfare is characterized by personal detachment. Massive power and violence are unleashed at the touch of a button hundreds of miles away, the killings recorded only as a blip on a screen.

Economic pressures on families detach parents from their children. Attention deficit disorder is a more culturally acceptable diagnosis than parent deficit disorder, which will not respond to a quick fix with drugs.

As physicians, we can easily come up with platitudes about the emotional and educational needs of the healthy, nonviolent development of children. But the real challenge is to recognize the risks of further abandoning violent children by labeling them as adults. Fortunately, there is light on the horizon. Mental health associations, the Alliance for the Mentally Ill, the Children's Defense Fund, and various human rights organizations are taking a stand for our children by opposing legislation that aims only to punish young offenders. Campaigns to help adolescents abstain from drugs are under way. The American Medical Association, the American Society for Adolescent Psychiatry, and the American Academy of Child and Adolescent Psychiatry are all active in educating policymakers.

In the next century, I'm optimistic that the threat of the death chamber for our children will be removed; the pendulum will swing back to medical diagnosis, adequate treatment for those we can help, and humane and secure containment in a safe, structured environment for those we continue to try to help. Perhaps this is what's meant by the land of Nod on the East of Eden. **MM**

Charles McCafferty is an adult, adolescent, and forensic psychiatrist practicing in St. Paul and a clinical professor of psychiatry at the University of Minnesota.

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Progress in Paleopathology

Biomedical Studies of Human Mummies

At the Paleobiology Laboratory at UMD's School of Medicine, anatomic and other studies of mummies and skeletons provide useful information about ancient populations.

Arthur C. Aufderheide, M.D.

Several decades ago, biomedical and anthropological researchers worldwide began to evaluate the potential for obtaining biomedical information from mummified ancient human remains. Today, anatomic and laboratory techniques, radiographic CT scans, chromatography, mass spectrometry, and other methods provide useful information about the health and disease of past populations. While these pioneering efforts are still in the exploratory stage of science, they are based on the expectation that knowledge about disease behavior in antiquity under dramatically different environmental and social conditions can reveal unique features that could be exploited today as new options for treatment or prevention.

This article describes the results of such investigations in the Paleobiology Laboratory at the University of Minnesota–Duluth School of Medicine. The prefix “paleo” means ancient. Paleopathology is the study of pathological lesions and conditions in ancient remains (fossils, bones, mummies, etc.). The more general term “paleobiology” includes all forms of life in antiquity. The goal of UMD’s Paleobiology Laboratory is to study disease in ancient populations, based on the hypothesis that human remains retain evidence of at least some diseases present at the time of death and that such evidence can be detected with laboratory techniques. I am the laboratory’s lone full-time staff member, but I collaborate with three or four scientists from other disciplines who are involved with the laboratory’s many projects. Following is a sample of our findings.

DRY BONE STUDIES

Initially, researchers in our laboratory attempted to make medical diagnoses by studying effects of diseases on skeletal tissues. However, except for obvious traumatic lesions, we found most diseases leave no detectable bone alterations, and those that do tend to result in changes that don’t suggest a specific diagnosis.

SKELETAL LEAD STUDIES

Next we attempted to make diagnoses by chemical analysis, focusing specifically on lead. Except near ore

outcroppings, lead is not a common element in most natural substances. However, humans have found lead to have great utilitarian value, and its inclusion in pipes, food containers, gasoline additives, and other substances has resulted in considerable human lead exposure. After developing an analytical micromethod for measuring lead¹ that permitted sampling of museum skeletal collections, we learned quickly that lead is retained in bone for decades, so it reflects lifetime lead exposure. In skeletons recovered from certain well-sheltered conditions, we have found antemortem levels of lead retained in bones more than 2,000 years old.

Over the last two decades we have studied skeletal lead content in several contexts. A study of American colonial populations demonstrated that wealthy colonists stored food and beverages in leaded pewter containers (plantation slaves and laborers could not afford the expensive pewterware). The lead leached into the containers and was ingested with the food. We used the resulting bone-lead levels to assess the socioeconomic status of individuals we studied.²

In another study, we analyzed hundreds of bone samples excavated from the cemeteries of 20 ancient communities that lived on the Italian peninsula between 800 B.C. and A.D. 800. Our results demonstrated that pre-Roman (Etruscan) people had lower bone lead levels, and therefore less lead exposure, than modern Duluthians. Around 400 B.C. the early Romans began mining lead ore intensively (to recover the silver from the ore), and over the next several centuries their bone-lead content rose precipitously, paralleling the increase in mined ore.³ From this study we know that during Rome’s imperial age many individuals ingested dangerous levels of lead. Because wine is acid enough to leach lead from a pewter container very efficiently, and because Roman aristocrats and especially their rulers became notorious for abuse of wine, some historians have suggested that the madness of Caligula and the erratic behavior of Nero and others might have been neurological manifestations of lead poisoning. Our chemical studies are consistent with that interpretation.

More recently, our skeletal analysis of a Barbados slave population solved the historical mystery of a 17th- and 18th-century Caribbean epidemic of abdominal cramps, peripheral neuropathy, and convulsions (all symptoms of lead intoxication). We were able to demonstrate that the people of Barbados and other Caribbean islands used lead containers when processing sugar. The containers leached lead into the stored sugar concentrate, and the subsequent distillation of fermented sugar into rum through a lead condensing tube heavily laced the rum with lead. This study identified both the cause of this 300-year-old epidemic and its epidemiology.⁴

STUDY OF MUMMIFIED HUMAN REMAINS

ANATOMIC STUDIES

Hoping to expand the number of diseases we could identify, in 1982 we began a series of human mummy dissections of the nonskeletal (soft) tissues, applying the methods of modern autopsy. Our interest focused on "naturally" mummified bodies (ones that became mummified as a result of environmental effects) whose organs remained, along with the disease pathology. Our quest took us to the world's driest deserts (the Gobi in China, the Atacama in South America, the Sahara in Egypt, and others). Bodies excavated from burial sites in such areas frequently become dehydrated spontaneously as a consequence of the arid conditions, arresting the enzymatic decay process and thus creating human mummies whose desiccated soft tissues and internal organs remain intact.

Our medical expectations were confirmed. For example, pleural adhesions (reflecting an episode of pneumonia from which the individual recovered) and acute, fatal, lobar pneumonia were both easily recognizable upon dissection. Examination of the bodies excavated from the cemetery for an entire community permitted us to quantify pneumonia frequency and case fatality rate. We learned that the population's conversion from hunter-gatherers to more sedentary agriculturalists 3,000 years ago in northern Chile was accompanied by a sharp rise in pneumonia, especially among children. The overall case fatality rate, however, hovered around 20 percent—similar to the rate calculated from Duluth hospital records from the early 1920s, before effective pneumonia therapy was available.⁵ Many other diseases also proved to be identifiable;⁶ however, since the epithelium is not preserved, some diseases, such as hepatitis, are undetectable by anatomic methods.

OTHER LABORATORY METHODS

Having identified both the potential and the limitations of anatomic methods, we turned to other laboratory techniques to further our research. By adapting methods common to molecular biology, we were able to extract from the lung of a 1,000-year-old Peruvian mummy a segment of DNA unique to the tubercle bacillus.⁷ This proved the presence of tuberculosis in the Americas 500 years before the Europeans' arrival in 1492.

Using nuclear magnetic resonance spectroscopy on a sample from an Egyptian mummy's intervertebral space

Making Faces

Reviewed by Charles R. Meyer, M.D.

Skulls. In forensic science, they hold clues to murders and mayhem. In archaeology, they are one of many treasures trapped in crypts and tombs that tell stories about past cultures. In art, skulls form the framework for portraits or sculptures. Archaeologist John Prag and artist Richard Neave have merged the three disciplines to create replicas of past individuals, using postmortem plastic surgery to solve both ancient and modern mysteries. They tell how and why it's done in "Making Faces: Using Forensic and Archaeological Evidence" (Texas A&M University, 1997).

Prag and Neave borrow techniques from your friendly dentist. Gingerly, they drop an aluminum foil-covered skull in alginate, that seaweed-based goo that dentists use for molding inlays. The resulting alginate mold accepts plaster, which produces a twin skull on which they lay clay muscles. Using tissue depths derived from surveys of human faces, they reproduce facial musculature before finishing their masterpiece with a skin substitute. The revitalized skull now has form and character, moving from the Halloweenish to the human.

The authors relate three homicide cases in England for which they helped identify deformed or desiccated bodies by reconstructing a face from skull remains. Although the reconstructed faces are hardly mirror images of premortem photographs, the resemblance is close enough to aid identification when combined with other evidence.

No convenient photographs help comparisons for Philip II of Macedon or King Midas of Phrygia. For these and other ancient cases, Prag and Neave marshal evidence from pottery, medallions, and tomb paintings to hazard guesses about their subject's physiognomy.

Prag and Neave's technique is a melange of archaeological science, informed historical guesses, and creative artistic license. "Making Faces" is an intriguing glimpse of the past through a forensic scope.

(the radiopacity of which suggested alkaptonuria [ochronosis]), we identified that material as natron, a chemical commonly used by Egyptian embalmers. Our finding established that the very common radiographic appearance of disc "calcification" in Egyptian mummies is not reflecting a rare disease but simply an embalming artifact.⁸

In addition, our laboratory has adapted modern methods of cocaine detection in hair to ancient samples, leading to the identification of cocaine in the hair of

Testing Mummy Tissues at HCMC

Virginia Pucel

One of the people whose tissues were analyzed recently by a Hennepin County Medical Center (HCMC) researcher was quite elderly—about 3,000 years old. In fact, he was a mummy. Horemkenesi was a 60-year-old Egyptian official who died sometime between 1040 and 1030 B.C., which classifies him as an ancient mummy. And the testing confirms that he likely died of a heart attack.

Fred Apple, Ph.D., director of HCMC's Clinical Laboratories, is using modern tools to compare tissue from the ancient mummy Horemkenesi with modern mummified tissues (tissues from someone who died recently that have been put through a drying, or desiccation, process). The goal of the testing, which Apple conducted in the Minneapolis Medical Research Foundation Research Laboratories, is to determine if the ancient mummy had indications of heart damage or injury. Apple and his research associate, Vincent Ricchiuti, Ph.D., are working with anthropologist Robert L. Miller, Ph.D., of the Swiss-based Bioanthropology Foundation Paleoepidemiology Project. Miller asked Apple to participate because of Apple's published papers on cardiac markers for cardiac injury and his background in tissue experimentation.

Apple explains, "There is a newly developed test that measures for the presence of a protein, cardiac troponin I, that is found only in the heart and is released into the bloodstream when a person has an injury to the heart, such as a heart attack. We've been using the test for about a year and a half here at HCMC. Patients suspected of having suffered a heart attack are tested for the presence of troponin I to determine if they have actually suffered a heart injury. If the person survives the heart attack, troponin I only stays in the person's circulation for three to five days. So if a deceased human's tissue samples show the

presence of troponin I, it means that there had been a heart attack around the time of death."

So what about Horemkenesi? We know something of his history because the Egyptians kept excellent records. The mummy tissue used in the testing is peripheral tissue that does not include internal organs, which typically were removed during preparation for mummification. The actual tissue samples from Horemkenesi weighed 500 mg and were about the size of five eraser heads from a #2 pencil. (And for inquiring minds, the mummy tissue samples arrived in a baggie inside a box.) For the modern control sample, Apple used peripheral tissue from a person who we know died of a heart attack.

The results? In the modern samples tested by Apple, tissues that should be negative are negative, and tissues that should be positive (from a heart attack victim) are positive, showing troponin I. In the mummy tissue, Apple also found troponin I, indicating that Horemkenesi had indeed suffered heart injury around the time of his death.

Research of this type increases our knowledge of disease, says Apple. We know that ischemic heart disease is a leading cause of death in our modern age, accounting for an estimated 12 percent of deaths worldwide. The mummy research is helping to shed light on the question, "Has the prevalence of death following acute myocardial infarction changed through time?" It confirms suspected histories and helps us understand the relationship between today and the past.

Virginia Pucel is a staff writer for Scanner, the newsletter of Hennepin County Medical Center.

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3,000-year-old mummies. We knew that the Inca people were chewing the raw leaves of the coca plant at the time of the Spanish conquest in A.D. 1534, but we had little detail about the earlier Andean populations. Our study of a large number of ancient hair samples revealed that the coca plant, native to the Amazon jungle, made its way up to the Andean highlands. When those highlanders moved down to the coastal areas of southern Peru and northern Chile, around 1000 B.C., they brought the plant and the practice with them. The practice proliferated in successive cultures until more than half of the adults, both men and women, indulged in chewing coca

leaves. The cocaine we found in the hair of infants up to 2 years old probably represents either cocaine transmission by breastfeeding or its administration as a medicinal agent. Notably, chewing raw coca leaves extracts so little cocaine that it does not produce the mood-altering effect of today's highly concentrated cocaine used for hedonistic purposes. In antiquity, the practice served a social and ritualistic purpose.

Of course, diet is also a factor in a population's state of health. Various major food groups (plants, terrestrial meat, marine foods, etc.) differ in their trace mineral content (especially strontium and barium) as well as in

their ratios of the stable isotopes of carbon, nitrogen, sulfur, and others. These food groups carry their chemical "label" with them as they become incorporated into body proteins and bone mineral. Measuring these chemicals in the tissues of ancient mummies has permitted us to reconstruct the principal elements of these peoples' diets.¹⁰ In some groups, whose diets varied consistently at different times of the year, the tissue values have indicated the season of death.

In addition to the work carried out in the Paleobiology Laboratory in Duluth, researchers elsewhere have used other methods to gain new information about ancient people. Radiographic CT scans, coupled with appropriate software, can reconstruct facial appearance from a skeletonized skull¹¹ (see related sidebar, page 29). The use of gas chromatography mass spectrometry¹² as well as immunological assessments¹³ and other methods to study ancient tissue samples is demonstrating the vast potential for gaining greater knowledge of past populations.

Although our existing research methods cannot yet identify all medical conditions, studies have shown that information exists in ancient human remains, the data can be extracted, and the information can offer insights into current disease. Paleopathology may now merit recognition as a serious scientific research discipline. **MM**

Arthur Aufderheide is a professor of pathology at the University of Minnesota-Duluth in the School of Medicine and director of the Paleobiology Laboratory. He worked for 25 years in a hospital-based, private clinical patient care pathology practice in Duluth before joining the UMD faculty in 1970 and establishing the Paleobiology Laboratory.

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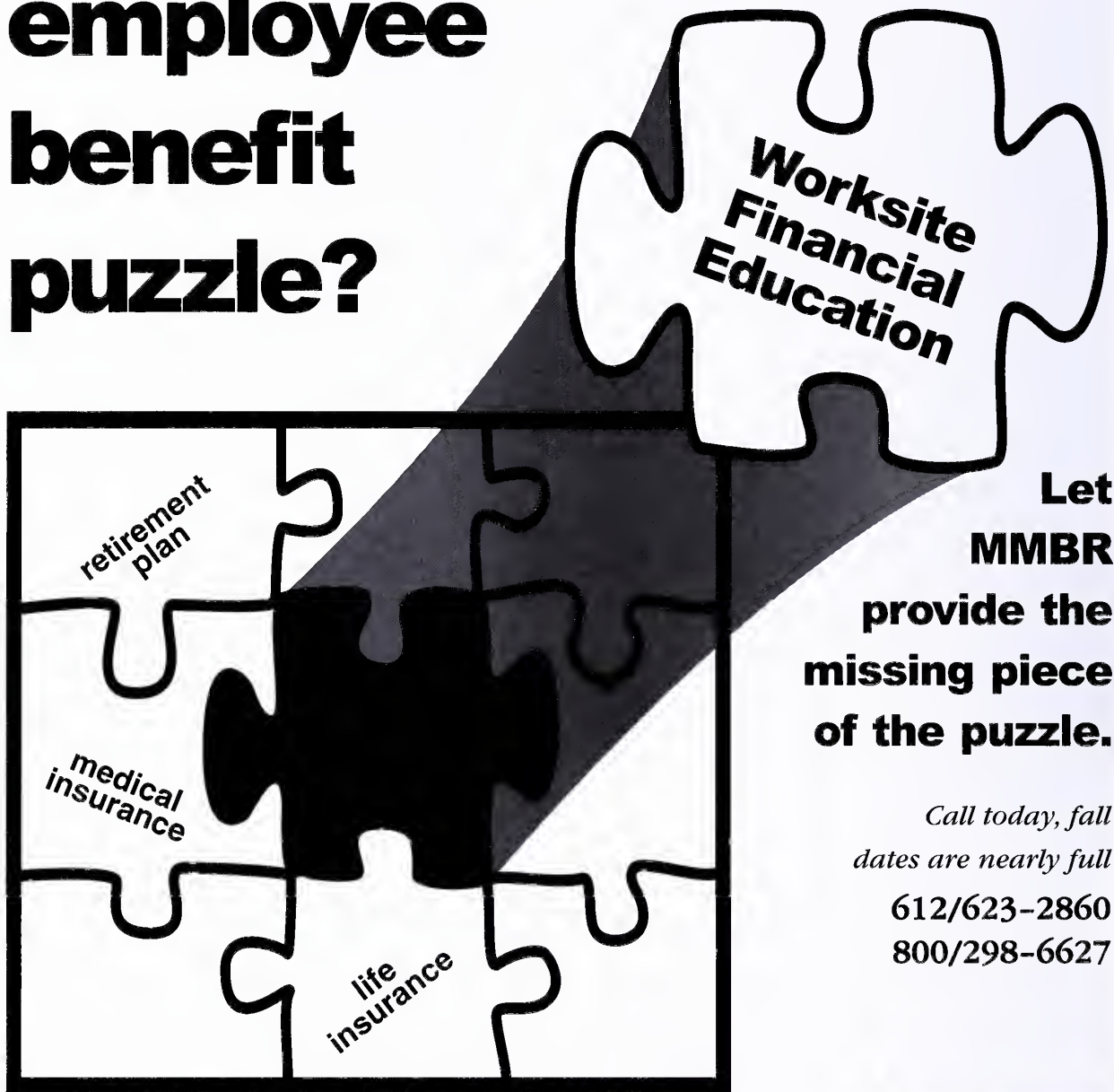
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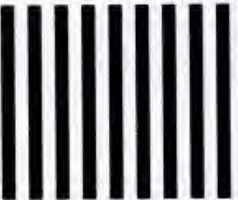
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ANNOUNCEMENTS



MMA Conducting Survey on Payment

MMA staff have just received a long-awaited survey software "kit" from the American Medical Association, which will help the MMA determine whether Minnesota physicians have ongoing difficulty receiving timely payments for the care they provide. Staff was preparing to present at the November 7 MMA Board of Trustees meeting a complete timeline for creating and conducting the survey. The goal is to receive and analyze survey results by early in the 1999 legislative session, says Dave Renner, MMA director of state and federal legislation, so that "if the results show a significant problem, we can pursue legislation."

Latest E&M Document Available

HCFA's latest draft of the Medicare documentation guidelines is a slightly revised version of the "new framework" unveiled in June. To obtain a copy, call Janet Silversmith by November 20 at 612/378-1875 or 800/DIAL MMA.

From Provider Tax to Public Health, HOD Sets Policy

Repealing the provider tax, holding health plans accountable for the medical decisions they make, and making all Minnesota workplaces smoke-free are among the MMA's top priorities for 1998-99. The 1998 Minnesota Medical Association House of Delegates debated dozens of resolutions at the 145th Annual Meeting October 9 in St. Paul.

Settlement Funds for Health Care

Repeal of the provider tax—to be offset with money from the state's tobacco settlement and/or a cigarette tax hike—is the MMA's "highest legislative priority" for 1999.

A related proposal that also passed overwhelmingly calls for using a portion of the settlement money for tobacco education and cessation programs.

Health Plan Accountability

The House passed a resolution seeking legislation to define utilization review as the practice of medicine and to require reviewers to be subject to Minnesota Board of Medical Practice regulations. The proposal, and others like it, were heavily debated in reference committee.

"I have a sense that whoever [brought] this simply opposes utilization review," said pulmonologist Paul R. Hamann, M.D., health plan consultant with the Department of Veterans Affairs.

C. Randall Nelms, M.D., an otolaryngologist and former MMA president, cited the results of the MMA's recent member poll, in which 70 percent of respondents said determinations of "medical necessity" made by health

plans are the practice of medicine. "[Health plans] make medical decisions based on a review of charts, based on test results—we're just asking them to be held accountable," Nelms said.

A majority of delegates supported a measure declaring MMA support for the Democratic-sponsored Patients' Bill of Rights, which includes the controversial provision that would subject self-insured health plans to liability in state courts. Reference committee debate on that resolution was also lively.

"I can hardly believe that this organization would be in favor of more lawsuits," said Richard Simmons, M.D., a family physician and medical director for Medica. "We have to be careful not to take the horror stories of New York and California and transpose them to Minnesota . . . [health plans] here are not the same."

Nelms said predictions that such liability legislation would cause health care costs to increase have not been borne out in Texas, where a health plan liability law was enacted in 1997. Texas has not seen "any increase in lawsuits, and there's been no increase in premiums," Nelms asserted. "Patients want strong incentives for HMOs to make careful decisions."

Kenneth Dedeker, M.D., an internist and medical director with Preferred One, said accountability already exists for patients in ERISA plans, as they have the right to sue their employers for medical decisions made by the plans.

But surgeon Bill Rupp, M.D., said that's not a viable option for many people. "To say that you can sue your

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VIEWPOINT

Judith F. Shank, M.D.
MMA President



We Must Lead Discussion on Health Care Costs

I am honored to be president of the Minnesota Medical Association. In my first column, I'd like to share some ideas I expressed in my inaugural address.

Managed care and patient protection are the subjects of a debate that sometimes sheds more heat than light. Health maintenance organizations were intended to save health care dollars and for a while they did. But now costs are rising again. In Minnesota, some insurance premiums increased by 20 percent a year in the past two years and all three big health plans lost money on operations in 1996 and 1997. We are no longer a state with low-cost health care.

There are many reasons for higher costs: an aging population; new, more costly drugs; and treatments that have dramatically improved the length and quality of life for patients with chronic diseases and formerly untreatable illnesses. Think of dialysis, bone marrow transplants, and surgery for Parkinson's disease. In the 1960s, all patients with leukemia or renal failure died. The new therapies are certainly gratifying; they are, however, very costly.

When the commission to save

Medicare from bankruptcy held a hearing in Minneapolis, the gist of enrollees' testimony was: We are not willing to give up any benefits. We are not willing to pay more. But we do need prescription coverage and coverage for eyeglasses. In other words, there were no cost saving suggestions; only ideas for more benefits.

As physicians, we want the best for our patients and, like our patients, we want it all—the best possible health care system, adequate reimbursement for our services, and the freedom to make medical decisions with our patients.

The problem is the cost. Our society has promised and invented more health care than anyone wants to pay for.

A major portion of the increased cost is paid by physicians. As costs go up, we receive lower payments from Medicare, discounted fees for service, and risk-sharing arrangements in which, it seems, we lose. And in Minnesota, we pay a provider tax. At the same time, our cost of delivering care is increasing. Our rent goes up. Administrative costs increase. As the labor shortage gets worse, we must pay our employees more and more. We are all working

harder and harder just to keep up.

What's the answer? Should there be more competition in the marketplace? Should we move toward individual insurance rather than employer-based insurance? How do we decide how to set limits on health care? Do we even want to acknowledge that limits exist?

These are difficult questions. But somehow, we must come to the understanding that we cannot continue to provide more and more health care without deciding how much is enough and who will be responsible for the expense. We need to change the rhetoric and have a real dialogue. All players need to be involved. Patients, employers, insurers, politicians, and most of all, physicians.

My hope and plan for the next year is that the MMA will convene a responsible, constructive discussion based on facts, not just anecdotes, and guided by our values as physicians and citizens so that we can begin to solve this problem for the next century. Physicians must bring their considerable intellectual talent, judgment, and experience to this table. I look forward to working with all of you as we face the challenge of health care in the new millennium. ■

A Congratulatory Embrace



The MMA's first woman president, M. Elizabeth Craig, M.D., congratulates the second one, Judith F. Shank, M.D. Shank was inaugurated October 9 at the 145th MMA Annual Meeting; Craig served as president in 1985.

Dr. Shank Inaugurated, Officers Elected

The Minnesota Medical Association's 145th Annual Meeting marked the inauguration of the MMA's second-ever woman president, Judith F. Shank, M.D. The House of Delegates elected the following officers, AMA delegates, and AMA alternate delegates at the meeting in St. Paul October 9:

President-elect:

John Van Etta, M.D.

Vice President:

Rebecca Hafner, M.D.

Secretary:

Robert Milligan, M.D.

Treasurer:

Noel Peterson, M.D.

Speaker of the House:

Blanton Bessinger, M.D.

Vice Speaker of the House:

Gary Hanovich, M.D.

AMA Delegates:

Robert D. Christensen, M.D.

Frank J. Indihar, M.D.

Carolyn J. McKay, M.D.

Audrey M. Nelson, M.D.

AMA Alternate Delegates:

Raymond G. Christensen, M.D.

Kenneth W. Crabb, M.D.

Anthony C. Jaspers, M.D.

John Van Etta, M.D.

All of the 1998-99 AMA delegates and alternate delegates are previous delegation members who were reelected.

Following the annual meeting, the MMA Board of Trustees reelected Paul C. Matson, M.D., chair of the board for a second one-year term. ■

POLICY *con't* from page 33

employer doesn't help most workers. They'll lose their jobs."

Ironically, later that same day, the Patients' Bill of Rights (H.R. 3605/S. 1890) was declared dead for this session in the U.S. Senate (see related article on page 36).

Physician Payments

The House passed two resolutions dealing with physician payments, including one calling on the MMA to survey members to determine whether delayed payments are a problem in Minnesota (see sidebar on page 33). The other measure calls for a law to prevent retrospective denial of payment for previously approved claims, except in cases of fraud or where incorrect information was provided.

Smoke-Free Workplaces

Delegates approved a proposal seek-

ing a legislative ban on smoking in all workplaces, including restaurants and bars, aimed at protecting employees from the effects of second-hand smoke. Longtime antitobacco activist A. Stuart Hanson, M.D., a pulmonologist and former MMA president, urged the reference committee not to water down the resolution. "It's the right thing to do," Hanson said.

The House also called for legislation to make all health care facilities and grounds smoke-free by the year 2000.

Over-regulation Concerns

Another legislative priority for the MMA will be repealing the additional abortion data reporting requirements passed by the 1998 Leg-

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POLICY *con't* from page 35

islature. The House agreed that the requirements interfere with the physician-patient relationship and "lack sound public health rationale."

And delegates passed a resolution that opposes mandating specific topics or diseases for continuing medical education (CME), including the current requirement mandating CME in infection control.

School Sports Physicals

Growing concern over the possibility of missed diagnoses in school sports and camp physicals led to passage of a resolution calling for legislation defining preparticipation athletic physical examinations solely as the practice of medicine. The House also approved a proposal that the athletic and camp physicals be expanded to include prevention, assessment, and screening for high-risk behaviors.

Food Irradiation

The MMA endorsed irradiation as a safe and effective process, while stressing the importance of incorporating it into a comprehensive food safety program "based on good

manufacturing practices and proper food handling, processing, storage, and preparation techniques." Pediatrician and public health specialist Carolyn McKay, M.D., testified that irradiation can lower food costs by lengthening the shelf life of some foods. "Putting fruits and vegetables in the hands of less affluent people is an important public health goal," McKay said.

Risks of Checking in Hockey

The MMA pledged to develop an educational campaign to inform the Minnesota Amateur Hockey Association, the Minnesota State High School League, parents, youth, coaches, and the public about the dangers of checking in hockey. Virginia Lupo, M.D., an ob-gyn and concerned hockey mom, testified that two Minnesota boys suffered major spinal cord injuries during hockey games last year. Weight disparities of 50 pounds exist among 11-year-olds, Lupo said, and young hockey players are often skating as fast as 20 to 30 mph. "Girls have dramatically fewer injuries," Lupo said, because checking is not allowed in girls' hockey. ■

MMA, Other State Medical Societies Sign Letter to Gingrich

The MMA joined roughly 35 other state medical societies in signing a letter to Rep. Newt Gingrich, Speaker of the U.S. House of Representatives, supporting the American Medical Association's espousal of the "Patients' Bill of Rights Act." The MMA House of Delegates passed a resolution endorsing the legislation, H.R. 3605 and S. 1890, at the MMA Annual

Meeting October 9. Later that same day, the bill was pronounced dead for this session in the Senate.

"We write today as rank and file physicians across America, to advise you that we support the AMA's position on this bill," the letter reads. Gingrich had earlier criticized the AMA for preferring "no patient protection to the Republican bill."

HOD Actions Earn Media Coverage

Actions by the Minnesota Medical Association House of Delegates at the Annual Meeting October 8 and 9 generated coverage by newspaper, television, and radio reporters throughout the state.

Among the resolutions receiving air time and ink were the measures calling for: a ban on smoking in all workplaces; the ability of patients to hold health plans accountable for medical decision-making; public education about the dangers of checking in hockey; use of tobacco settlement money exclusively for health-related purposes; legislation defining school athletic exams solely as the practice of medicine; and insurance coverage for prescription contraceptive devices and medications.

Television news crews from WCCO-TV, KSTP-TV, KMSP-TV, and KARE-TV covered the meeting. Coverage of HOD actions appeared in the St. Paul *Pioneer Press* and the Minneapolis-based *Star Tribune*, and Associated Press articles about the Annual Meeting were published in newspapers throughout the state.

Minnesota News Network broadcast news about the annual meeting on radio stations across the state, including an interview with Blanton Bessinger, M.D., speaker of the House of Delegates, and an interview with Judith Shank, M.D., the newly inaugurated president of the MMA. Minnesota Public Radio station KNOW also broadcast coverage of the meeting, as did KFGO radio in South Dakota.

MMA House Sets Policy Goals with 1998 Resolutions

The 1998 Minnesota Medical Association House of Delegates convened at the Radisson Hotel in St. Paul on October 8 and 9, taking action on dozens of resolutions that will set the MMA's agenda for the coming year.

Res. 100, Minority Student Mentoring Program

Adopted as amended

The MMA will initiate a two-year student mentoring program aimed at increasing the number of minority physicians and health care providers in Minnesota. The program will provide training and support for mentoring physicians; establish working relationships with schools; host an annual event with minority health care providers, mentors, and students; and track physicians and students in the program. The MMA Minority Affairs Committee will report yearly on the progress of the program to the MMA Board of Trustees and the HOD.

Res. 101, Physician Training in Violence Prevention/Intervention

Adopted as amended

The MMA will request that the American Medical Association develop minimum standards for training physicians in medical schools and residency programs in violence prevention and intervention. The MMA will also encourage Minnesota medical schools to promote development of violence prevention/intervention skills in medical students and residents, and will suggest that all organizations providing continuing medical education through the MMA offer training in family violence prevention and intervention.

Res. 102, Sight and Hearing Protection

Adopted

The MMA will work with the Sight and Hearing Association and other agencies as appropriate to explore initiatives, such as public awareness and education, to reduce the incidence of injury and loss of sight and hearing in all populations.

Res. 103, Workplace Violence and Abuse Prevention

Adopted

The MMA will encourage all hospitals and clinics to adopt policies to reduce and prevent workplace violence and abuse and develop policies to manage reported occurrences. The MMA will also encourage local medical societies and other professional organizations to adopt policies aimed at reducing and preventing workplace violence.

Res. 104, Support for Education Center at the U of M Medical School

Adopted as amended

The MMA endorses the concept of a new Education Center at the University of Minnesota Medical School.

Res. 105, Mental Illness Awareness Week

Adopted as amended

The MMA will support the annual activities of Mental Illness Awareness Week, promoting awareness and educational efforts—among members and their patients—of mental disorders.

Res. 106, Mandated Content of CME

Adopted as amended

The MMA will reiterate current MMA policy opposing mandating specific topics or diseases for continuing medical education and will seek legislation to repeal the requirement for mandated CME in infection control. The MMA recognizes the need for increasing awareness and the importance of continuing education in infection control for all health care personnel. Mandating specific education for license renewal does not recognize the unique characteristics of the practice of many physicians.

Res. 107, Amendments to MMA Bylaws

Adopted

Res. 108, MMA Dues and 1999 MMA Budget

Adopted

Res. 109, MMA Support of CME and Accreditation Programs

Adopted

The MMA recognizes that increased fees to accredited sponsors may have a deleterious, downward spiral effect on the overall continuing medical education and accreditation programs of the MMA. The MMA will rescind its position on budget neutrality for the CME and accreditation programs and invest financially in these programs to help further the overall mission of the MMA and maintain high quality continuing education programs throughout Minnesota.

Res. 110, Medical Workplace Sexual Discrimination and Harassment

Adopted as amended

The MMA endorses further research on the prevalence and causes of sexual discrimination and harassment in the medical workplace, and endorses elimination of this type of abuse.

Res. 111, Gifts to Physicians

Not adopted

Resolved that the MMA investigate the statutory restrictions on the acceptance of gifts to physicians from pharmaceutical manufacturers and wholesale drug distributors, and taking into consideration the ethical guidelines in place, develop a recommendation to the MMA BOT on revising the relevant statutes.

Res. 112, Preparing for Year 2000 Computer Problems

Adopted as amended

The MMA will encourage health plans to give documentation to providers on the health plans' steps toward eliminating Y2K problems to prevent disruptions in patient care.

Res. 113, Membership by Choice

Adopted as amended

The MMA will continue to study the issue of options for [organized medicine] membership in Minnesota and report recommendations to the 1999 HOD.



Res. 114, Water Safety

Adopted as amended

The MMA supports the use of life-jackets or personal flotation devices for minors while in watercraft, or while waterskiing or windsurfing, and supports current Department of Natural Resources guidelines and education campaigns.

Res. 115, Protective Headgear

Adopted as amended

The MMA supports the mandatory use of headgear by minors in Minnesota while in-line skating, downhill skiing in licensed ski areas, riding off-road vehicles (such as four-wheelers and motorcycles), and riding bicycles.

Res. 116, Seat Belt Safety

Not adopted

Resolved that the MMA continue to aggressively lobby the Minnesota Legislature to make the failure to use seat belts while driving a primary offense, with a fine of \$100 for the first offense and \$300 for the second offense. Current MMA policy supports a \$100 fine for first offense for failure to use a seat belt while driving; many delegates thought the proposed second offense fine was excessive.

Res. 200, Adjustment for MinnesotaCare Tax Form

Not adopted

Resolved that the MMA propose that the Minnesota Department of Revenue revise the MinnesotaCare annual tax return form to reflect the tax included in payments from payers with a separate line for adjustment for tax payments included at the rate of .02 for 1997 forms and .015 for 1998 forms. Many delegates agreed that the MMA's main priority should be eliminating the provider tax altogether.

Res. 201, Disclosure of Health Care Benefit Costs

Adopted as amended

The MMA encourages Minnesota employers to disclose and itemize the costs of health care premiums, including employer contributions, on all payroll checks for their employees.

Res. 202, MetroEast Coalition for the Working Poor

Adopted as amended

The MMA supports the efforts of the MetroEast Coalition and other volunteer organizations to provide health care services to low-income, uninsured persons.

Substitute Res. 203, Managed Care Accountability

Adopted as amended in lieu of resolutions 203, 207, and 216

See cover article.

Res. 204, Provider Tax

Adopted as amended

See cover article.

Res. 205, Tobacco Money to Patients—Not BCBS

Adopted as amended

The MMA supports and commends Blue Cross and Blue Shield's commitment to ensure that proceeds from the settlement of the litigation with the tobacco companies be used for tobacco prevention and cessation efforts.

Substitute Res. 206, Tobacco Settlement Dollars

Adopted as amended in lieu of resolutions 206, 214, and 215

See cover article.

Res. 208, Centralized Medical Database

Referred to the BOT, "that the Board be empowered to open discussions with other interested parties as it deems appropriate and to report back to the 1999 HOD."

Resolves that the MMA open discussions with hospitals, health plans, and other interested private parties to establish a centralized medical database; and that the MMA establish a policy that the database be privately held until the measures used can be demonstrated to be valid and reproducible; and that the MMA establish a policy that the participating parties receive only their own data to be compared to the aggregate and unidentifiable benchmark/data information.

Res. 209, Regulation/Oversight of HMO Expenditures

Adopted

The MMA will sponsor legislation to regulate HMO insurance and financial matters through the state Department of Commerce rather than the Department of Health.

Res. 210, Simplification of the MERC Claim Forms

Not adopted

Resolved that the MMA request that the Medical Education and Research Costs (MERC) program simplify the training grants request forms to allow smaller providers to participate comfortably in the MERC program, providing financial support to individuals training health care providers.

Res. 211, Research Tax Credit

Not adopted

Resolved that the MMA support an increase in funding for qualifying research expenditures, and that the MMA recommend an increase in funding for qualifying research expenditures be accomplished by allowing a direct deduction from the MinnesotaCare provider tax for the entire amount of such expenditures.

Res. 212, Insurance Parity for Mental Health and Psychiatry

Adopted as amended

The MMA will support national and state parity bills to ensure standard health care coverage for mental health and chemical dependency, and the MMA delegation to the AMA will carry a resolution to the AMA HOD seeking support for national and state parity bills to ensure standard health care coverage for mental health and chemical dependency.

Res. 213, Provider-Driven Care Systems

Not adopted

Resolved that the MMA investigate current Minnesota statutes to identify statutory barriers to the formation of provider-driven care systems, and that the MMA introduce and support legislation to eliminate any identified barriers to

the formation of provider-driven care systems.

Res. 217, MMA Endorsement of 'Patients' Bill of Rights'

Adopted
See cover article.

Res. 300, Fair Coverage for Contraceptive Medications

Adopted as amended
The MMA supports insurance coverage for contraceptive medications and devices requiring prescriptions.

Substitute Res. 301, Protecting Children from Gun Violence

Adopted in lieu of resolutions 301 and 302

The MMA endorses the Student Pledge Against Gun Violence ("I will never bring a gun to school; I will never use a gun to settle a dispute; I will use my influence with my friends to keep them from using guns to settle disputes. My individual choices, when multiplied by those of young people throughout the country, will make a difference. Together, by honoring this pledge, we can reverse violence and grow up in safety.").

Res. 303, Continuity of Care/Any Willing Medical Doctor

Adopted as amended
The MMA supports the concept of "patient choice" and "any willing physician" (as defined to mean licensed pursuant to Minnesota Statutes Chapter 147) and will study the issues and pursue appropriate recommendations for the 1999 legislative session.

Res. 304, Guidelines for Adolescent Preventive Services

Adopted as amended
The MMA 1) strongly advocates the universal incorporation of GAPS into routine patient care settings in which care is provided to adolescent patients, including HMOs and hospital clinics; 2) urges appropriate physician payment for health education related to patient care when reported with the appropriate CPT codes; and 3) will work with third party payers to provide coverage

and payment for proper adolescent care at appropriate intervals. The MMA will work to educate physicians about the importance of GAPS.

Res. 306, Prompt Payment of Insurance Claims

Not adopted
Resolved that the MMA introduce Minnesota legislation requiring health plans to pay undisputed claims within 30 days and disputed claims within 30 days of final determination, or be assessed a reasonable simple interest rate. Policy adopted by the 1997 House of Delegates to study the issue and introduce legislation, if necessary, is currently in progress (see "Announcements" on page 33).

Res. 307, Public Health Foundation (MPAAT)

Adopted as amended
The MMA supports Minnesota Partnership for Action Against Tobacco (MPAAT), an independent, nonprofit organization, directed by a board of directors with significant representation from public health, health care, medical, and research organizations, to administer the 3 percent consent judgment funds consisting of a \$102 million cessation account and a \$100 million research account. The MMA also will actively support legislative approval of \$650 million over the next five years to fund a comprehensive tobacco use prevention program in Minnesota as described in the state's settlement agreement, and will support oversight of the \$650 million prevention fund by MPAAT to ensure long-term sustainability and independence from the political influence of the tobacco industry.

Res. 308, Varicella Vaccine

Adopted
The MMA will introduce legislation that would require immunization against varicella for all students enrolling in any elementary or secondary school or child care facility in Minnesota.

Res. 309, Abortion Data Reporting

Adopted as amended
See cover article.

Res. 310, Dioxins

Adopted
The MMA acknowledges the role that polyvinyl chloride (PVC) plays in the production of dioxins, acknowledges the environmental and physical threats associated with dioxins, acknowledges the need to reduce the use of PVC products, and supports efforts to address dioxin as a pollutant through strategies including, but not limited to, material substitution of PVC products.

Res. 311, Food Irradiation

Adopted as amended
See cover article.

Res. 312, Preparing for Biological, Nuclear, and Chemical Terrorism

Adopted as amended
The MMA supports the efforts of state government to begin planning an appropriate response to any act of biological, nuclear, or chemical terrorism.

Res. 313, Health Care for Young Adults

Adopted as amended
The MMA will develop a public information campaign to inform young adults and the public about health risks common to young adults and the benefit of having a primary source of medical care. The MMA delegation to the AMA HOD will develop a resolution to take to the AMA HOD calling on the AMA to research the need for a national initiative devoted to responding to the health care needs of young adults.

Res. 314, Delayed Payments

Adopted as amended
See cover article and survey sidebar on page 33.

Res. 315, Agreement on Payment for Services

Adopted as amended
See cover article.

Res. 316, Medicare User Fees

Adopted
The MMA opposes the imposition of Medicare user fees on physicians and



will lobby against Medicare user fees to the Minnesota congressional delegation.

Res. 317, Varicella Vaccinations

Not adopted

Resolved that the MMA support the mandate of varicella vaccines for children, where appropriate, prior to entry to school or daycare centers.

Res. 318, 'No-Check' Hockey

Adopted as amended

See cover article.

Res. 319, Ban Smoking in All Workplaces

Adopted as amended

See cover article.

Res. 320, Health Plan Risk Sharing Arrangements

Referred to the MMA BOT to study and report back with recommendations to the 1999 HOD

The MMA will petition Congress and the Minnesota Legislature to amend laws governing health plans to remove all provisions of law that permit physicians to enter into risk sharing arrangements with health plans for services other than their own.

Res. 321, Inadequate Home Care/Hospice Reimbursement

Referred to the MMA BOT

Res. 400, Domestic Violence in the Presence of a Child

Adopted as amended

The MMA will pursue legislation to increase the level of criminal offense for domestic violence when perpetrated in the presence of a minor.

Res. 401, Minor Consent Law

Adopted as amended

The MMA supports Minnesota Statute sections 144.341-347 regarding patients' access to the medical records of their unemancipated minor children.

Res. 402, Smoke-Free Health Care Facilities/Grounds

Adopted as amended

See cover article.

Res. 403, Statute of Limitations in Malpractice Litigation

Not adopted

Resolved that the MMA request that before making any changes in the statutes governing tort law, the Minnesota Legislature study all aspects of the process, including review of the procedures in nearby states and a critique of the California statutes.

Res. 404, Education on New Advance Directives Mechanisms

Adopted as amended

The MMA will work with state and local professional associations and health agencies to disseminate information to MMA members and the public regarding the purpose and use of advance health care directives.

Res. 405, Improved Pain Management for End of Life

Adopted as amended

The MMA will inform members about the intractable pain law and will work with local medical societies to identify pain-management resources designed to 1) encourage individual practitioners' efforts to manage end-of-life pain adequately and 2) improve patients' access to effective methods of end-of-life pain management.

Res. 406, Medical Malpractice Legislation

Adopted as amended

The MMA will prepare, and if necessary, bring forward, a tort reform bill that would cap noneconomic damages at \$250,000, include a sliding scale cap on attorney contingent fees, use periodic payments for large awards, include changes to joint and several liability provisions consistent with MMA policy, and provide equal access by the defense and the plaintiff to the physician experts.

Res. 407, Using the Term 'Physician'

Referred to the MMA BOT

The MMA will pursue federal legislation changing the current Medicare definition of "physician" to refer only to those with the M.D. or D.O. degree, and

the term "physician services" to refer only to services provided by licensed M.D.s, D.O.s, or their designees. The Minnesota delegation to the AMA will call on the AMA to pursue similar legislation.

Res. 408, Nursing Facility Surveys

Adopted as amended

The MMA will review current state and federal regulations affecting long-term care facilities to determine whether they infringe or potentially infringe on the practice of medicine and the ability of physicians and their patients to determine the course of treatment and will, if necessary, make appropriate recommendations.

Res. 409, Preparticipation Athletic Exams

Adopted as amended

See cover article.

Res. 411, Emergency Medical Services for Children (EMSC)

Adopted as amended

The MMA will endorse and support the mission and work of the EMSC Resource Center of Minnesota and support an appropriation of funds by the Minnesota Legislature for this purpose.

Res. 412, Resources for Alternative/Complementary Medicine

Adopted

The MMA will continue to help physicians identify available resources, including those reported in the medical and scientific literature, that describe alternative and complementary therapies and their utilization.

Res. 413, COBRA/EMTALA LAWS

Adopted as amended

The MMA will encourage the AMA to work toward reform of the Emergency Treatment and Active Labor Act.

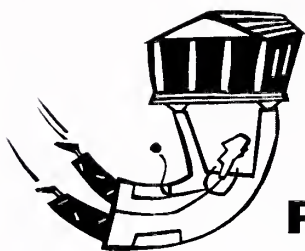
Res. 414, Preparticipation Athletic and Camp Physical Exams

Adopted as amended

See cover article.

NEWS DIGEST

*People and places
making medical news*



People & Places

Richard Ziegler, Ph.D., professor of medicinal microbiology and immunology, has been named dean of the School of Medicine at the University of Minnesota–Duluth. Ziegler has been interim dean of the school since September 1997, following the departure of **Ron Franks, M.D.**, to East Tennessee State University. Ziegler, a faculty member since 1971, said he hopes to enhance the school's reputation in certain areas, including interdisciplinary health care professional education and biomedical and rural population-based research.

Former Minneapolis mayor and congressman **Donald Fraser** in October was appointed interim city health commissioner for Minneapolis. Fraser, 74, replaced **Sandra Meicher**, who declined the job last month after being appointed earlier this summer by Mayor **Sharon Sayles Belton**. Meicher cited personal issues that prevented her from leaving Madison, Wisconsin, where she heads a nonprofit medical research organization.

Ancel Keys, Ph.D., was honored in September for his pioneering work at the University of Minnesota nearly 50 years ago, which demonstrated the link between diet and heart disease. Keys's Seven Countries Study examined the diets of men in Yugoslavia, Finland, Italy, the Netherlands, Greece, the United States, and Japan. Men with diets highest in saturated

fats had the highest cholesterol levels and the most heart attacks. Keys, now 94, also developed K-rations (K stood for "Keys") for soldiers fighting in World War II.

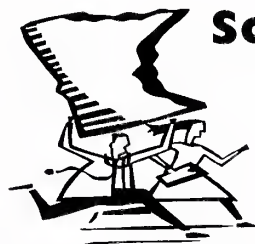
Jerry Rogers, M.D., a family physician from Moorhead, was elected to the American Academy of Family Physicians Board of Directors September 17, during the organization's Congress of Delegates in San Francisco. Rogers was president of the Minnesota Academy of Family Physicians in 1990-91 and since then has served as one of the Minnesota delegates to the AAFP Congress.

Susan Hadley, M.P.H., the founder and former director of **WomanKind**, a nationally recognized program of support systems for battered women, joined the University of Minnesota this fall. She will work with the Minnesota Center Against Violence and Abuse on a

national program to assist health care and criminal justice providers in domestic abuse intervention services. She is also involved with the School of Public Health's Center for Violence Prevention and Control.

The Labor and Delivery Unit at Hennepin County Medical Center now offers a formal Doula Program for mothers-to-be. A "doula" is a woman experienced in childbirth who provides physical, emotional, and informational support to a mother before, during, and just after childbirth.

In an effort to combat macular degeneration, the leading cause of blindness in the United States, University of Minnesota physicians and the Minnesota Lions opened the Minnesota Lions Macular Degeneration Research and Rehabilitation Center (the MAC) in September. ■



Socioeconomics

HealthPartners Survey Finds Physicians' Morale Low

Responding to a survey conducted for the HealthPartners Physician

Association, 92 percent of HealthPartners physicians queried disagreed with the statement, "Physician morale within HealthPartners is high." In a memo summarizing the survey results, association leaders wrote, "HealthPartners has strayed from its primary founding mission of putting the patient first. Physicians complained that Health-

Partners has become less a health-care provider and more a rapidly growing insurance company."

HealthPartners physicians say that crucial decisions are made without their input, morale is low, and the work schedule is grinding. Mary Brainerd, executive vice president for care delivery at HealthPartners, attributed morale problems to changes in employee benefits and work rules, including changes in vacation and sick pay policies and more on-call time.

Minnesotans Report Satisfaction with Health Plans, Doctors

Eighty-six percent of Minnesotans say they are satisfied with their health care, according to a poll taken for the *Saint Paul Pioneer Press*, KARE-11 TV News, and Minnesota Public Radio. In a sampling of 812 registered Minnesota voters, 47 percent say they are very satisfied and 39 percent say they are somewhat satisfied with their health care.

Minnesotans who belong to managed care health plans report slightly higher satisfaction levels with their health care than those who belong to traditional fee-for-service plans. Poll respondents say they are happy with their family doctors and specialists and the care they received in hospitals. Sixty-two percent say they are satisfied with their family doctors and 27 percent say they are somewhat satisfied. Only 3 percent are not very satisfied and 8 percent are not at all satisfied.

Medical Costs Will Rise, Report Predicts

After holding steady for several years, the nation's spending on medical care is likely to climb again, according to a report by the **Health Care Financing Administration**. The study, published in the September 14 issue of *Health Affairs*, predicted that U.S. spending on health care will double during the next decade,

reaching \$2.1 trillion by 2007, although medical inflation is not likely to be as dramatic as it was during the late 1980s.

The rise of managed care over the past few years slowed health care spending, but, the report asserts, with 85 percent of working Americans already enrolled in managed care plans, there is little potential for more cost savings.

Blue Cross Proposes Investing Tobacco Funds in Health Projects

Blue Cross and Blue Shield of Minnesota announced plans to use its

\$469 million in tobacco settlement money on smoking cessation and health improvement programs. Company officials say they believe the proposal will save members \$2.3 billion by lowering health costs over the next 20 years. Blue Cross said it would use about a fourth of the money—\$124 million—to provide its subscribers with smoking cessation aids such as drugs, nicotine patches, and gum. Most of the money would be used for community health improvement projects tackling such health issues as poor eating



Rates, Trends & Data

Minnesota Ranked Healthiest State—Again

Minnesota has been ranked the healthiest state in the country for the sixth time in nine years by the annual **ReliaStar State Health Rankings**. Mississippi is at the bottom of the list with the country's least healthy population. The nation's overall health has risen 12.7 percent over the past nine years, according to the report, due to a 6 percent decrease in smoking, lower unemployment, an increase in prenatal care, reduced infant mortality, and fewer premature deaths.

The **ReliaStar State Health Rankings** combine 17 components that measure disease, lifestyle, access to health care, occupational safety and disability, and mortality. Minnesota ranks in the top 20 on all measures except adequacy of prenatal care and number of limited activity days due to physical or mental illness. It is in the top five for low prevalence of smoking, low heart disease, high rate of high school graduation, high support for public health care, and low premature death. ■

Number of Uninsured Rises Sharply

The number of people without health insurance rose sharply in 1997, to 43.4 million, and the proportion lacking coverage reached the highest level in a decade, 16.1 percent, according to the **Census Bureau**. The analysis also found that over a 36-month period from 1993 to 1995, 29 percent of the population lacked insurance for at least one month.

Young adults ages 18 to 24 were least likely to have coverage. Thirty percent were uninsured in 1997, compared with 28.9 percent in 1996. Hispanics had a 34 percent chance of being uninsured last year, compared with 21.5 percent of blacks and 12 percent of non-Hispanic whites. The number of poor people without insurance stayed about the same—11.2 million—as did the number of uninsured children, 10.7 million.

habits, weight problems, alcohol and drug abuse, cancer, and heart disease. Another fourth of the money would be used to pay state and federal taxes.

Under the settlement, tobacco companies will pay Blue Cross in installments over five years; after accounting for inflation, the value of the settlement is estimated to be \$434 million. State Commerce Commissioner Dave Gruenes must approve the company's plans before the money can be spent.

In September, a Dakota County judge dismissed a group of class-action lawsuits by Blue Cross members who were seeking in part to have the money rebated to them. Attorneys for the Blue Cross subscribers, however, said they expect the dismissal to be appealed.

Law Firm to Give \$30 Million from Tobacco Trial Fees

The law firm that won Minnesota's \$7.1 billion tobacco settlement announced a \$30 million gift to establish the Robins, Kaplan, Miller & Ciresi L.L.P. Foundation for Education, Public Health and Social Justice as a subsidiary of the Minneapolis Foundation. It is the largest gift the 83-year-old foundation has ever received, and, nationally, the largest gift ever from a law firm to a community foundation. The firm represented the state of Minnesota and Blue Cross and Blue Shield of Minnesota in the joint lawsuit against several tobacco companies. As part of the settlement, the tobacco companies are to pay the law firm fees of \$550 million.

'Healthy Minnesotans' Promotes Public Health

The Minnesota Health Improvement Partnership in October unveiled 18 new public health improvement goals, collectively labeled "Healthy Minnesotans," built on the notion that everyone benefits from and shares responsibility for a healthy

society. Established by Health Commissioner Anne Barry, the partnership is an ad hoc committee of people from around the state, including

public health professionals, county commissioners, citizens, health plan representatives, and health care providers. ➡

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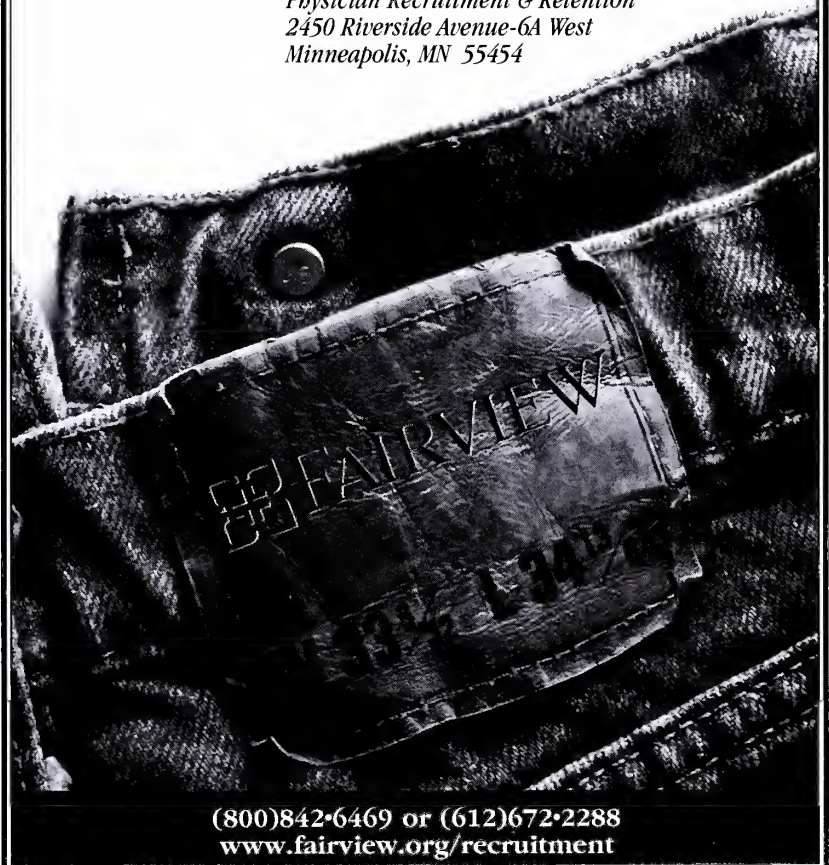
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Research & Innovations

Twin Cities AIDS Clinics to Test Vaccine

AIDS clinics at Abbott Northwestern Hospital in Minneapolis and Regions Hospital in St. Paul will begin testing AIDSVax, an experimental AIDS vaccine made by California-based VaxGen Inc. AIDS researchers and study leaders Keith Henry, M.D., and Frank Rhame, M.D., note that the experiment, while exciting, poses some risk as well as ethical concerns.

Although the vaccine cannot cause AIDS, it may cause healthy volunteers to test positive for the HIV virus as the body produces AIDS

antibodies in response to the vaccine. The potential for a "false positive" test might cause volunteers problems with their health insurance companies. Moreover, a major ethical concern is that the experiment might cause healthy volunteers to be lulled into a false sense of security and engage in risky behavior such as IV drug use or unprotected sex. Ultimately, the vaccine's efficacy will not be known unless some of the volunteers become exposed to the AIDS virus. In addition, no vaccine is 100 percent effective, say the study leaders.

The study will include 5,000 people nationwide and 2,500 people in Thailand and is the final stage before U.S. Food and Drug Administration approval. Volunteers will be given seven shots over three years, with one-third of the volunteers receiving a placebo.

'U' Physician Receives Grant for Colorectal Cancer Screening

Mark Yeazel, M.D., M.P.H., assistant professor of family practice and community health at the University of Minnesota and a member of the university's Cancer Center, will design and evaluate an intervention aimed at improving screening rates for colorectal cancer—the second leading cause of cancer deaths but preventable if detected early.

Yeazel received a four-year, \$240,000 grant from the Robert Wood Johnson Foundation to compare colorectal cancer screening rates in patients over age 50 in six primary care clinics affiliated with Allina Health System. Working with physicians and patients, he will provide feedback to physicians and information to patients, including screening reminders.

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HOLY SOCIETY

(continued from page 13)

lighter, more animated, as we return to our families and our lives. We will never have direct contact with the family of the deceased but rather have the inner satisfaction of knowing we have served our community and given the dead the respect they deserve.

The contrast between the attitudes toward the dead that I have observed in my religious communal life and in my professional life is striking. While the emphasis on "respect for the dead" present in traditional Judaism may be formally espoused by the medical profession, it seems our behavior as physicians often falls short of this ideal. My personal attitude toward the dead has evolved since my medical school experiences. As a resident I came to view the dead as an indictment, staring back at me with sightless eyes, reminding me of my failure to preserve life. This was a difficult time to deal with the dead, with my usual response a rapid departure from the vicinity of the dead to the more comfortable company of my living patients. I rationalized this retreat from my deceased patients, reasoning that I had no more to offer after the act of dying was completed. It never occurred to me to spend a few moments with my dead patient in silent, respectful contemplation.

More recently, I have been working on a stroke rehabilitation unit, trying to restore function rather than fight death directly. Here, death is a rare visitor, and not a major part of my professional experience. My primary interaction with the dead is no longer at work but in my religious communal life, and this has afforded me an opportunity to gain a new perspective. In the Chevra, the process of dying is past, and my involvement is confined to dealing with the body of the deceased. Without the emotional investment of having been responsible for this person's life, I can at last view this as its final stage. My responsibility here is to provide the dignified treatment that we all would wish for. Despite my uncertainty about the meaning of life, and my fluctuating confidence in an afterlife, I know that I am doing a true Mitzvah, a good deed that exists for its own sake, and not for reward. Providing this dignified treatment to our patients who have died seems to be a Mitzvah we could all perform a bit better.

Acknowledgment

The author would like to acknowledge Rabbi Meir Sender for his thoughtful review of the manuscript.

Joel Stein works in the Physical Medicine and Rehabilitation Department at Spaulding Rehabilitation Hospital in Boston, Massachusetts.

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Shea v. Esensten ... Another Chapter in ERISA Preemption?

This landmark case won a degree of consumer protection for beneficiaries in self-funded health plans, but will other cases follow suit?

Christina F. Rich, J.D.

The continuing struggle to strike a balance between the rights and responsibilities of managed care organizations and the consumers they serve has led to an ever-increasing body of case law. *Shea v. Esensten* may represent a new chapter in ERISA litigation and a new avenue for health plan enrollees seeking redress under the federal law that has served to limit many types of claims against managed care organizations.

HOW ERISA LIMITS LEGAL CLAIMS

A growing number of Americans receive their health care through some type of managed care organization—an estimated 120 million enrollees in 1996, compared with only 10 million in 1982.¹ Although overall consumer satisfaction ratings for managed care plans are generally good, when individuals have serious complaints against their health plans and seek legal redress, they quickly encounter the many complexities in this area of law.

This is especially true for people in self-funded health plans, which fall outside the state consumer-protection measures under the preemption provisions of the Employee Retirement Income Security Act of 1974 (ERISA),² the federal statutory framework that governs administration of self-funded employee benefit plans.* The large number of Americans who receive health care through self-funded plans are not covered by

traditional state tort remedies.

The "preemption clause" under section 514 of ERISA broadly preempts all state law and regulation relating to employee benefit plans and preempts a claimant's right to recover benefits under state law. The legal remedies available to plaintiffs under ERISA are quite different from the traditional remedies in medical liability cases. In addition, the amount of damages typically awarded is far lower than in medical liability cases. Under ERISA, enrollees are entitled to benefits according to the terms of their contract. Additional damages, or "extra-contractual damages," are limited under section 502(a)(3), which allows beneficiaries to obtain "other appropriate equitable relief" to redress a violation of ERISA or their plan's terms. In these types of cases, however, compensatory and punitive damages are generally not allowed under general principles of contracts and trusts. The U.S. Supreme Court affirmed this in 1993, stating that although plan participants have the right to obtain "equitable relief," this right "does not authorize suits for money damages."³

More and more frequently, HMO enrollees are finding some recourse by bringing suit under ERISA itself. An important trend in ERISA litigation is the increasing number of cases based on an ERISA fiduciary's duty of loyalty. Under ERISA, a fiduciary exercises discretion over the management of plan assets or exercises discretionary control over plan administration.⁴ Fiduciaries have a duty to act "solely in the interest of the participants and beneficiaries and for the exclusive purpose of providing benefits to participants and their beneficiaries."⁴

SHEA V. ESENSTEN

In February 1997, the 8th U.S. Circuit Court of Appeals, whose jurisdiction includes the state of Minnesota, issued a landmark decision in *Shea v. Esensten*.⁵ The court ruled that a managed care organization has a duty to inform plan participants of any arrangements it has with providers (e.g., physicians) that could discourage these physicians from referring cases to specialists.

Patrick Shea was a participant in his employer's self-funded medical

*ERISA applies to all self-insured employee benefit plans, including pension plans and health plans, and spells out beneficiaries' rights under the plan. ERISA applies to any employee benefit plan established or maintained by an employer or employee organization engaged in commerce or an industry affecting

commerce. The plan must be established for the purpose of providing medical, surgical, hospital care, sickness, disability, accident, or other specifically enumerated benefits. ERISA was established to facilitate interstate commerce and ensure the uniform administration of employee benefit plans.

plan and had selected an HMO option with Medica Health Plan. He experienced severe, recurring chest pains and consulted his primary care physician, whose approval was necessary for a referral to a cardiologist. Shea told his physician of his symptoms (chest pains, shortness of breath, and dizziness) and requested the referral. Shea's doctor said a referral was unnecessary. When Shea's symptoms did not improve, he offered to pay to see a cardiologist. His physician, however, stated that Shea was too young (age 40) and did not have enough symptoms to justify a visit to a cardiologist. Shea never saw a cardiologist and died of heart failure within three months.

No one informed Shea that Medica encouraged its primary care physicians, through financial incentives, to minimize referrals to specialists or that Medica's physicians received reduced compensation for making too many referrals.

After her husband's death, Dianne Shea asserted various claims against the physician and Medica Health

Plan, including a claim under ERISA for breach of fiduciary duty. She claimed the HMO failed to disclose the arrangement that offered financial incentive to discourage referrals to specialists. The 8th Circuit ruled that the HMO's duty of loyalty required it to disclose such financial incentives and that Medica's failure to do so was a breach of fiduciary duty under ERISA.

Medica agreed that a duty of loyalty existed but argued that the compensation arrangements between the plan and its doctors were not material facts requiring disclosure under ERISA. The district court agreed with Medica; however, the 8th Circuit reversed, finding that, "[f]rom the patient's point of view, a financial incentive scheme put in place to influence a treating doctor's referral practices when the patient needs specialty care is certainly a material piece of information."⁶ The court concluded, "Mr. Shea had the right to know Medica was offering financial incentives that could have colored his doctor's medical judgment

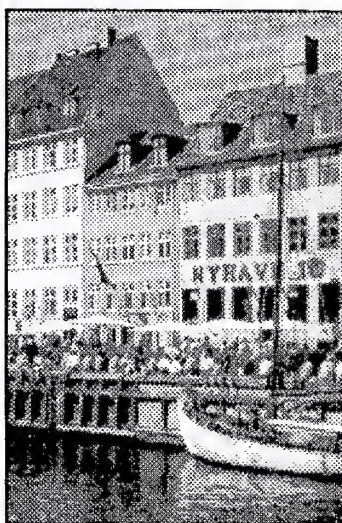
about the urgency for a cardiac referral. Health care decisions involve matters of life and death, and an ERISA fiduciary has a duty to speak out if it 'knows that silence might be harmful.'"⁶ The 8th Circuit court referred the case back to the district court for discovery on the issue of disclosure of the plan's reimbursement mechanisms for further fact-finding. As this article goes to press, a trial date has been set for early November, although a summary judgment is pending.

CASE PROVIDES TOO LITTLE GUIDANCE

Although the 8th Circuit's decision in this case was clear and forceful, it has been criticized for failing to provide courts and commentators with significant guidance for future cases.⁷ Indeed, only five months after the 8th Circuit delivered its decision, the Southern District of New York in the case of *Weiss v. CIGNA Healthcare*⁸ ruled that ERISA's fiduciary duty does not require health plans to disclose financial incentives

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aimed at lowering referral rates. The court held that "CIGNA's compensation system requires physicians to weigh their economic interests against their ethical obligations to their patients and as such, it presents a danger of abuse. However, to the extent that a doctor takes advantage of financial incentives and withholds necessary care from his or her patients, that doctor's ethical breach is not attributable to CIGNA."⁹

The court in *Weiss* was unwilling to accept the plaintiff's contention that CIGNA's compensation arrangement violated ERISA because it deprived enrollees of their right to receive "medical opinions and referrals unsullied by mixed motives."¹⁰ The court stated that "such a claim is tantamount to a claim that risk-sharing arrangements in managed care are inherently illegal ..."¹⁰ The district court concluded that the "plaintiff's concerns about the soundness of managed care policy is best suited for resolution by branches of government other than the judiciary ... and indeed legislative and executive action has already been under-

taken in that regard."¹⁰ As an example, the court cited federal Health Care Financing Administration regulations limiting the types of bonuses and incentives HMOs can pay doctors for controlling the cost of services provided to Medicare and Medicaid enrollees.

CONCLUSION

Although the 8th Circuit's ruling in *Shea* is still applicable in Minnesota, courts here and around the nation continue to grapple with the ongoing issues surrounding ERISA, a law that was written nearly 25 years ago, when the health care market was very different. Many courts and legal scholars are calling on Congress to revise ERISA to offer greater protection to health plan beneficiaries—protection that more accurately reflects the managed care market of the 1990s.

Until such time, a growing body of case law will interpret ERISA in light of the current health care landscape. Claims seeking redress based on a breach of fiduciary duty will continue to be part of this evolution. Indeed, a recent Supreme Court rul-

ing clarified that plan participants may bring a class-action suit to recover benefits stemming from a breach of fiduciary duty.¹¹ In the future, courts may continue down the path laid by the 8th Circuit and expand the fiduciary's duty to disclose financial incentives or other aspects of managed care, such as utilization review or other cost-containment measures.

MM

Christina Rich is an attorney with the Minnesota Medical Association.

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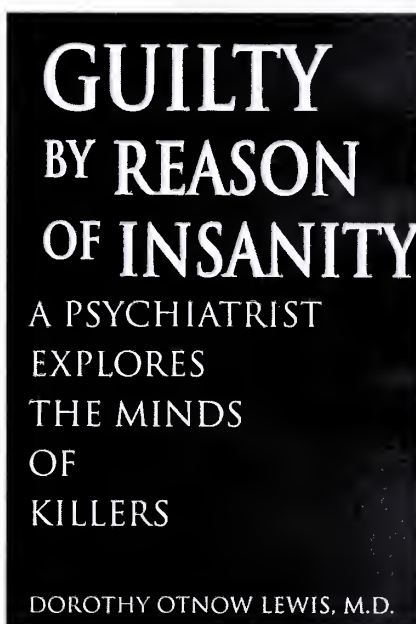
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In "Guilty by Reason of Insanity: A Psychiatrist Explores the Minds of Killers," murderers' stories are told with the breathless tone of daytime talk shows.

Reviewed by Carl Elliott, M.D., Ph.D.

When I was doing my psychiatry rotation in medical school in South Carolina, a classmate and I visited death row at the state penitentiary in Columbia. A prison chaplain there was a friend of my classmate's father, and he arranged for us to talk to some of the death row inmates. The inmates were polite and friendly. There were no bars or windows separating us from them, no restraints or chains. We sat together in what looked like a ramshackle classroom. Many of the inmates had undergone religious conversions during their time in prison. One had started reading philosophy and was eager to talk to me about Plato's allegory of the cave. Another one had grown up in my hometown, and we had gone to school together. While I was in college, he had been convicted of two murders. We talked about my brother, who had played on the junior high basketball team with him, and he told me about his conversion to Islam in prison. On the whole, he and his fellow death row inmates seemed far less scary than the prison guards, and once we had gotten past the elaborate security apparatus, I felt like we were visiting a very badly funded residential school. One serial killer had taken up drawing cartoon greeting cards, and as we left he promised to send us one. The entire experience was surprisingly ordinary, which was what made it so chilling. These men were waiting to be electrocuted.

Dorothy Ortnow Lewis also vis-



ited death row inmates but describes a vastly different experience in "Guilty By Reason of Insanity" (Fawcett Columbine, 1998). Reading Lewis's accounts, I found myself wishing that she would allow some of this ordinariness, the utter banality of the experience, to show through in her prose. Lewis is a forensic psychiatrist, and in her work she has come across men and women who have committed acts of extraordinary violence and perversity. No embellishment is necessary to make these stories appealing to voyeuristic readers, yet her book reads like a tell-all celebrity biography. "And that is how I came to be the last woman to kiss Ted Bundy," she breathlessly tells

us. To her credit, Lewis is a crusader for a just cause. She wants to abolish the death penalty, and she succeeds in making even the most hardened criminals—and even an enthusiastic executioner—appear, if not quite deserving of our sympathy, at least worthy of understanding. But Lewis's book has none of the depth or subtlety that would make her case persuasive to thoughtful readers who (unlike me) did not agree with her in the first place. I suspect she has undermined her own cause by putting together the literary equivalent of a daytime talk show.

Some of this embellishment is merely annoying, such as the imitation African-American dialect ("Whatsa madda wit you?") or the faux Southern accents she puts in the mouths of prison guards in Florida, where Lewis and a colleague were given a hard time by guards wary of allowing them to bring their medical instruments into the prison. ("Well now, Doctor," one guard tells them, "we cay-ent have something lahk thay-et come into the prison, now, cay-en we?" Her patronizing tone almost made me wish the prison guards had turned them away.) At other times Lewis allows herself the kind of literary license that calls the entire book into question. One of the first case histories concerns 13-year-old Lee Anne Jameson, who stabbed a friend to death with a paring knife while waiting for a school bus. Lewis also tells us that Lee Anne does not remember committing the murder.

Yet at the beginning of the chapter in which this case history appears, Lewis narrates the murder in its entirety, from the time Lee Anne gets up in the morning until she is picked up by the police after the murder, allowing the reader access not only to the external facts of the case, but to Lee Anne's

thoughts as she committed the murder—what she saw, what she smelled, exactly how she perceived the voice of the friend she stabbed (“different, loud, menacing”).

The subtitle of “Guilty by Reason of Insanity” is “A Psychiatrist Explores the Minds of Killers,” and it

may be a more accurate description than the author realizes. As a narrator, she actually inhabits Lee Anne's mind, describing thoughts Lee Anne herself does not remember. Lewis reproduces verbatim accounts of entire conversations she did not hear and describes in detail actions she did not witness. The omniscient narrator is a standard device in fiction, but how are we supposed to understand an omniscient narrator-psychiatrist who presents her narration as truth?

A number of gifted contemporary essayists write philosophically on various aspects of medicine. Writers like Oliver Sacks, Peter Kramer, John Lantos, and Antonio Damasio have written insightfully, even movingly, about illness and disability, taking us more fully into the experience of being sick. With topics as promising as murder and insanity—two of the great literary themes—I expected far more from “Guilty by Reason of Insanity.” This book, I am afraid, I simply do not trust. MM

Carl Elliott is an associate professor at the University of Minnesota's Center for Bioethics.

FAMILY PRACTICE - Franciscan Skemp Healthcare-Mayo Health System, based in La Crosse, WI, has over 170 physicians/associate providers at 12 clinics and 3 hospitals in WI, MN, IA.

Waukon, IA: BC/BE family physician with interest in the full range of family medicine, including OB, to join 3 BC family physicians and 2 certified PAs in brand new clinic facility. The Waukon Clinic adjacent to 40-bed community hospital. Waukon, pop. 4,000, located in beautiful northeast Iowa, 17 miles from Upper Mississippi River and 50 miles from La Crosse.

Prairie du Chien, WI: Developing new practice and building new clinic facility located on Mississippi River, 60 miles south of La Crosse. Two BC/BE primary care physicians and associate provider needed to staff our newest medical facility in community of 6,000 with service area of 22,000. Hospital has 49 beds. OB is preferred, not required.

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Contact: Tim Skinner at skinner.timothy@mayo.edu or Bonnie Guenther at guenther.bonnie@mayo.edu. Phone: 800-269-1986 or fax CV to 608-791-9898. Franciscan Skemp Healthcare-Mayo Health System, 700 West Avenue South, La Crosse, WI 54601.

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A Calendar of Continuing Medical Education Courses

Provided through the MMA Committee on Accreditation and CME. For assistance with scheduling meetings or for information on future medical meetings and CME courses, please contact the MMA office: 3433 Broadway Street NE, Suite 300, Minneapolis, Minnesota 55413-1761; 612/378-1875. For a complete listing of our calendar, visit the MMA home page at www.mnmed.org. Information for each entry is arranged by date; name of program; primary sponsor; location; contact person.

NOVEMBER 1998

Nov. 6-7 **Mayo Sports Medicine Symposium** Mayo Foundation; Mayo Foundation, Rochester, MN. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Nov. 12 **Validating Spiritual Care Through Clinical Research** Mayo Continuing Nursing Education; Siebens Medical Education Building, Mayo Medical Center, Rochester, MN. CONTACT: Registrars, Mayo Continuing Nursing Education, 200 First Street SW, Eisenberg SL-41U, Rochester, MN 55905; 800/545-0357; cne@mayo.edu.

Nov. 12-13 **Critical Care (includes two hours of infection control CME)** HealthPartners Institute for Medical Education; Holiday Inn East, St. Paul, MN. CONTACT: Sharon Kopp, Registrar, Regions Hospital, 640 Jackson Street, St. Paul, MN 55101; 651/221-3992.

Nov. 19-21 **Annual Orthopaedic and Trauma Seminar** Hennepin County Medical Center; Minneapolis Convention Center, Minneapolis, MN. CONTACT: HCMCCME, 701 Park Avenue, Mail Code 861B, Minneapolis, MN 55415; 612/347-2075, toll-free 888/263-4262.

Nov. 20 **HIV Primary Care Conference** Allina Health System; Metropolitan Conference Center, Minneapolis, MN. CONTACT: Julie Page, Clinical Education-81475, PO Box 9310, Minneapolis, MN 55440-9310; 612/992-3897.

DECEMBER 1998

Dec. 3-4 **Cardiovascular Conference** HealthPartners Institute for Medical Education; Holiday Inn East, St. Paul, MN. CONTACT: Sharon Kopp, Registrar, Regions Hospital, 640 Jackson Street, St. Paul, MN 55101; 651/221-3992.

FEBRUARY 1999

Feb. 1-5 **Continuing Challenges in Hematology, Oncology and Hematopathology** Mayo Medical Laboratories; Beaver Run Resort, Breckenridge, CO. CONTACT: Julie McAdams, 200 First Street SW, Rochester, MN 55905; 507/284-8599.

Feb. 6-13 **HealthEast 1999 Winter Medical Seminar** HealthEast; Cabo San Lucas, Mexico. CONTACT: Annette Anderson, 1700 University Avenue W, St. Paul, MN 55104; 651/232-5104.

Feb. 11-14 **Neurology in Clinical Practice** Mayo Foundation; Rancho Bernardo Inn, San Diego, CA. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Feb. 15-17 **Gynecologic Surgery: Perspectives for the 21st Century** Mayo Foundation; Rancho Bernardo Inn, San Diego, CA. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Feb. 25-27 **Mayo Clinic State-of-the-Art Symposium: Arrhythmia Management** Mayo Foundation; Silverado Resort, Napa Valley, CA. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Infection Control Courses

The following activities have been designed to meet the Minnesota Board of Medical Practice physician licensure requirement for CME credit in the subject of infection control.

Nov. 12-13 **Critical Care (includes two hours of infection control CME)** HealthPartners Institute for Medical Education; Holiday Inn East, St. Paul, MN. CONTACT: Sharon Kopp, Registrar, Regions Hospital, 640 Jackson Street, St. Paul, MN 55101; 651/221-3992.

Nov. 20 **HIV Primary Care Conference** Allina Health System; Metropolitan Conference Center, Minneapolis, MN. CONTACT: Julie Page, Clinical Education-81475, PO Box 9310, Minneapolis, MN 55440-9310; 612/992-3897.

ENDURING MATERIALS

Videotapes: **Bloodborne Pathogens, Antibiotic Update and Resistance, TB Update, Flesh-Eating Strep** Allina Health System. CONTACT: Patricia E. Walton, 5601 Smetana Drive, PO Box 9310, Minneapolis, MN 55440-9310; 612/992-2867.

Videotapes: **Antibiotic Resistance/STDs, HIV/Adult Immunizations, Diarrheal Parasitic Diseases/Foodborne Diseases** University of Minnesota. CONTACT: Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600 or 800/776-8636.

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Pediatric Orthopaedic Update	December 4
Burn Care Today	February 4 - 5
Family Medicine	March 11 - 12
Occupational Medicine	March 19
Ob/Gyn	April 8 - 9
ENT Update	April 16

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- Cancellation of ads must be made by the first of the month preceding month of issue.

Mankato Clinic, Ltd., is seeking additional BC/BE physicians in the following specialties: occupational medicine, dermatology, gastroenterology, pulmonary medicine, radiology, and urgent care. The Mankato Clinic is a 70-physician multispecialty group practice in south-central Minnesota with a trade-area population of 250,000+. Guaranteed salary first year, incentive thereafter with full range of benefits and liberal time off. For more information, call Dr. Bryon C. McGregor, Medical Director, or Roger Greenwald, Executive Vice President, 507/625-1811, or write PO Box 8674, Mankato, MN 56002-8674. (*10/98-R)

MDsearch assists medical groups and hospitals in their recruiting efforts. For confidential information on opportunities in the Upper Midwest, send CV and/or call collect Mary Jo Cordes, MDsearch, PO Box 21507, St. Paul, MN 55121; 612/454-7291. Fax: 612/454-7277. (2/93-R)

Urgent Care Physicians: Independent group seeking part-time/full-time physicians to staff our urgent care facilities in Bloomington, Burnsville, Edina, and Lakeville. Contact the director of support services, 612/985-8931, or send inquiries to Quello Clinic Ltd., 7801 East Bush Lake Road, Suite 300, Bloomington, MN 55439. (*6/98-R)

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Olmsted Medical Center is seeking BC/BE physicians in family medicine and ob/gyn physicians to join our 75-physician multispecialty group. Great opportunity for well-trained physicians to join a family-friendly group in a

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BC/BE Internist: The Fergus Falls Medical Group, P.A., is recruiting a seventh BC/BE general internist to join its 35-physician multispecialty group. Additional training with either echocardiography or nephrology/dialysis management would be helpful. Outstanding opportunity for well-trained individual interested in balancing personal values and professional endeavors. Excellent salary/benefits package includes guaranteed salary the first year with full partnership after one year. For confidential information on this opportunity, contact: David T. Bjork, M.D., Bruce E. Money, M.D., or Jim Wilkus, Administrator, 615 South Mill Street, Fergus Falls, MN 56537, 218/739-2221 or 800/247-1066. EEO/AA 3-11/98

Dermatologist: Progressive and growing 94-physician multispecialty clinic based in St. Cloud, Minnesota, seeks a BC/BE dermatologist to join busy department. Opportunity to establish full scope dermatology practice. Centra-Care Clinic-River Campus is located in a growing central Minnesota community which offers an outstanding lifestyle with three colleges, excellent public and private schools, and abundant recreational activities. St. Cloud is located on the Mississippi River and is a one-hour drive to the Twin Cities or premier lake areas. Attractive compensation and benefit package. Interested applicants should send CV to: Mark Murphy, Clinic Administrator, Centra-Care Clinic, 1200 6th Avenue North, St. Cloud, MN 56303. Phone 320/240-2151; fax 320/240-2113. 3-1/99

Fergus Falls Medical Group, P.A. The Fergus Falls Medical Group is expanding its 35-physician multispecialty clinic and is seeking physicians in the following specialties: ENT, family practice, general surgery, dermatology, orthopedics, psychiatry, and internal medicine. Excellent salary/benefits package includes guaranteed salary the first year with full partnership after one year. For confidential information on this opportunity, contact David T. Bjork, M.D., or Jim Wilkus, Administrator, at 615 South Mill Street, Fergus Falls, MN 56537, 800/247-1066. EEO/AA 2-11/98

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Falls Medical Search Seeks Physicians for practice opportunities locally and nationally. To explore new practice options confidentially, send your CV or call Pat Falls, Falls Medical Search, 34 Forest Dale Road, Minneapolis, MN 55410; 612/922-0207 or 800/383-8916. (*5/92-R)

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- Physical Med. and Rehabilitation
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Neurologist—Minnesota: Progressive and growing 94-physician multispecialty clinic based in St. Cloud, Minnesota, seeks third BC/BE neurologist to share one-in-seven call. Growing central Minnesota community offers an outstanding lifestyle with three colleges, excellent public and private schools, and abundant recreational activities. St. Cloud is located on the Mississippi River and is a one-hour drive to the Twin Cities or premier lake areas. Attractive compensation and benefit package. Interested applicants should send CV to: Mark Murphy, Clinic Administrator, CentraCare Clinic, 1200 6th Avenue North, St. Cloud, MN 56303. Phone 320/240-2151; fax 320/240-2113. 3-1/99

Janesville, Wisconsin: Dean Medical Center, a 395+ physician multispecialty group, is actively recruiting a BE/BC internist for our Riverview Clinic in Janesville, Wisconsin (population 60,000, located 40 miles southeast of Madison). Janesville is a beautiful, family-oriented community with excellent schools and abundant recreational activities. There are 60 physicians at our Riverview Clinic, which is a new facility overlooking the scenic Rock River. Currently there are 12 internal medicine physicians at the Riverview location. The call schedule will be 1 in 12 for weekdays and weekends. Excellent compensation and benefits will be provided with full-time employment leading to shareholder status in two years. For more information, contact Scott Lindblom, Medical Staff Recruiter, Dean Medical Center, 1808 West Beltline Highway, Madison, WI 53715, work 608/250-1550, home 608/845-2390 or fax 608/250-1441. 3-1/99

Internal Medicine—Minnesota: CentraCare Clinic is a progressive and growing 94-physician multispecialty clinic based in St. Cloud, Minnesota. The River Campus site located in St. Cloud seeks a BC/BE internist to join a general internal medicine department of 12 physicians. Growing central Minnesota community offers an outstanding lifestyle with three colleges, excellent public and private schools, and abundant recreational activities. St. Cloud is located on the Mississippi River and is a one-hour drive to the Twin Cities or premier lake areas. CentraCare Clinic—Little Falls seeks a BC/BE internist to join an experienced general internal medicine physician at the Little Falls site. Call schedule one in four. Growing central Minnesota community offers an outstanding lifestyle, outstanding public school system, and abundant recreational activities. Little Falls is located on the Mississippi River and is a 90-minute drive to the Twin Cities and a 30-minute drive to St. Cloud or premier lake areas. Attractive compensation and benefit package. Interested applicants should send CV to: Mark Murphy, Clinic Administrator, CentraCare Clinic, 1200 6th Avenue North, St. Cloud, MN 56303. Phone 320/240-2151; fax 320/240-2113. 3-1/99

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Simple Gifts

The hospital where I work has 300 beds, 1,100 doctors on staff, one MRI, and two CT scanners. The Harmony Community Hospital has eight beds and three doctors on staff. CTs and MRIs are pictures in



journals. The lopsided numbers tell a story of contrasting medical practice. But the real story is contrasting ways of life. The themes in this month's feature story, "Hospitals in the Heartland," prompt a year-end meditation on community.

When I read the articles for an upcoming issue, I jot down words that capture the essence

of the topic, hoping that some kernel will pop into 600 digestible words for an Editor's Note. Out of our rural hospitals piece came community, pride, loyalty, and simplicity. Although you might yawningly label these clichés of an anachronistic rural life, I think they are prescient pearls for 2000 and beyond. These kernels suggest what the MRI-urban culture has lost and is clumsily groping to regain.

Hillary Clinton enshrined the concept of community with her phrase, "It takes a village." Harmony, Minnesota, fits neatly into the image of community as village—a place where everybody knows everybody. Knowing everybody in Minneapolis or St. Paul is unfathomable. But the point of community is not learning the history and scandal of every soul in a geographic area. It's connecting to and caring about a group of people who are not your flesh and blood. It's stepping outside your cocoon and taking responsibility for someone else.

Pride is what we hear Dan Dierdorf invoke in those late-season Monday Night Football games between two teams with no playoff hopes. Pride is also one of the seven deadly sins. Somewhere between the locker room and the pulpit is the pride that buys a piece of an institution, such as a small hospital, and owns a chunk of its accom-

plishments because of sweat investment. Dictionaries tie pride to self; this pride ties self to something bigger and makes it better. In the government-bashing, job-jumping, self-enhancing '90s, loyalty is a dusty word. Like community and pride, it links a person to something else. Its decline may be a symptom of self-absorption or commitment avoidance, but we need to dust it off. Loyalty means believing in something. We desperately need that.

Have you ever noticed how much stuff there is in your life? Not just the jammed closets and the chaotic garage, but also the jammed schedules and the chaotic mind. The search for simplicity is creating a mini-epidemic of Walden-searching. The growing interest in silent retreats at monasteries, Shaker society, and one-room cabins in the woods is a collective cry to keep it simple. Cluttered minds and lives rarely function well.

But with dozens of patients, scores of daily deadlines, and a thicket of perplexing media messages, how do we find simplicity? Do we throw out our CT scanners and set up shop on a pristine pond? No, but maybe we resolve for the penultimate year of the millennium to find islands of community and invest in their health so that we can proudly proclaim our fealty.

'Tis a gift to be simple, as the Shaker tune says. The gift is there all the time. As we wade through the slush of our days, we should notice the stark beauty of bare branches and glimmering ice. Simplicity for the having.

.....
—Charles R. Meyer, M.D., Editor-in-Chief

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Medical Humor Is No Laughing Matter

Soon after my arrival in the United States, I was introduced to distant relatives on Long Island, New York. After a short while, one of them turned to my brother and announced, "He laughs too much for a doctor." I was amazed to learn that in my dream country, where everything is so abundant, rationing still exists in the matter of laughter for doctors.

In recent years, more and more articles in medical journals have suggested not only the reconsideration of old remedies such as herbs and balneotherapy, but new ones as well. Things such as faith, music, pets, acupuncture, and massages are beneficial in addition to conventional medical therapies. Regardless of our education, training, and philosophy, we have to agree with the concept that we cannot provide optimal care for our patients if we ignore all factors but the direct cause and effect of the disease. We have to take into consideration the complexity of biological, mental, and emotional factors.

We know that alternative methods besides medication can also be beneficial for mood. If stress can cause harm, can't harmony, peace, music, and colors just as well improve our moods and well-being? When you hear a Beethoven violin concerto, see Monet's water lilies, listen to a child's laughter, smell spring flowers, or feel the warmth of the summer sun ... aren't these mood enhancers? We have another tool that is infrequently used and yet is the most optimistic way to look at even tragic circumstances. That tool

is humor. Why do we ignore it? Why not consider using humor in appropriate times and circumstances?

The sky is stormy over medical practice. We can be sad about it, ignore it, face it, or laugh about it. The situation remains the same, but our attitudes will make all the difference—in the way we feel. Life can be viewed as a decrease in time from birth on or an increase in experience until we die. We can enjoy life or resent it. Humor acts like a set of rose-colored glasses, modifying the gray or black sights. Some people drink or take drugs to elevate their moods. Laughter is harmless and easily available.

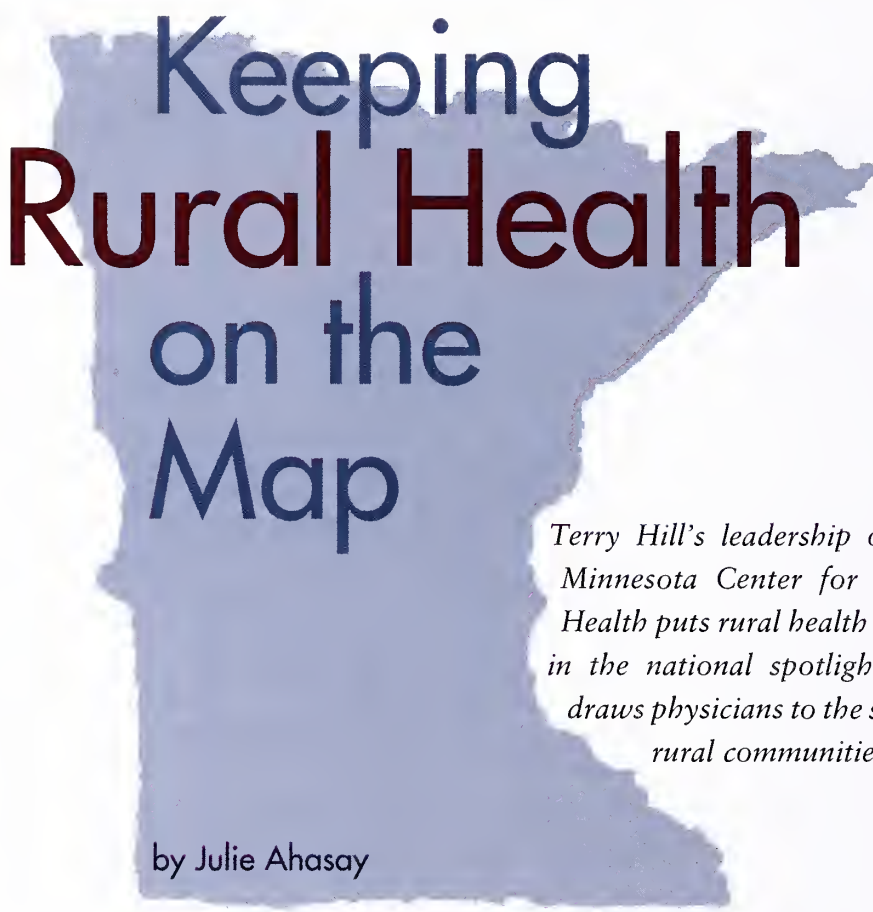
I would like to propose that we all start to use more humor in our practice of daily life. Immunology can be influenced by a positive attitude. Both laughter and choco-

late can promote the production of endorphins, which stimulate positive energy.

Doctors, please take humor seriously. The most powerful tool is communication: the initial message, the presentation, the diagnosis. Please do not wait until others have published a scientifically proven, double-blind study, approved by the ethics committee, financially supported by the NIH, and enthusiastically endorsed by the president of the United States, stating that humor has therapeutic value. Use it sooner—wherever it is applicable. And finally, doctors, please remember—humor is not a laughing matter.

*Robert O. Fisch, M.D.
Pediatrician
Minneapolis, Minnesota*





Keeping Rural Health on the Map

Terry Hill's leadership of the Minnesota Center for Rural Health puts rural health issues in the national spotlight and draws physicians to the state's rural communities.

by Julie Ahasay

Terry Hill has competed in 16 running marathons, seven cross-country ski marathons, six triathlons, and several grueling bike races. The stamina required for that level of competition is a handy commodity in his professional life, which requires the same kind of commitment, perseverance, and endurance.

As executive director of the Minnesota Center for Rural Health, executive director of the Northern Lakes Health Consortium, and director of the National Rural Health Resource Center, Hill might be in Moose Lake, Minnesota, one day, and in Washington, D.C., the next. With a unique perspective that comes from experience, Hill has been a successful advocate for rural communities for 20 years. He grew up in Tok, Alaska, population 87, on the edge of the gold fields. "The nearest hospital was 210 miles away," he recalls. "The public health nurse who stopped by once a month provided our health care."

His father's job brought the family from Tok to the Twin Cities in the 1960s. Hill, who had been attending a one-room classroom in Tok, graduated from Robbinsdale High School, Minnesota's largest high school at the time. Following graduation from the University of Minnesota, where he earned a degree in history and journalism, Hill spent a year in Vietnam and was awarded five military decorations, including the Bronze Star.

Back in the States, he earned a master's degree in public administration from Shippensburg University and began working with migrant workers in the fields of south-central Pennsylvania. "I'm an old grassroots organizer," says Hill of that experience. When he returned to Minnesota, he put his understanding of rural issues and his passion for organizing to work in Duluth, where he lives with his wife, Jane, a third-grade teacher, and daughters Kristina, 18, and Allison, 16.

Hill's reputation as an effective grant manager, organizer, and leader in programs on aging, developmental disabilities, and emergency medical services led the Blandin Foundation to ask him to create the Northern Lakes Health Consortium in 1984. The NLHC is a network of 30 hospitals, 25 nursing homes, and more than 30 medical clinics in northeastern Minnesota, northwestern Wisconsin, and upper Michigan. One of the first of its kind in the nation, the consortium has conducted five national demonstration projects, including the Rural Health Transition Program, which became the model for national legislation.

Ray Christensen, M.D., a past president of the Minnesota Medical Association and a rural family physician at the Gateway Family Health Clinic in Moose Lake, has worked with Hill on a variety of projects since the early 1980s. "Terry has affected legislation for the entire nation," Christensen says. "Terry is a good consensus builder. He's a great listener—he hears you out and if you disagree, he works his magic to change your thinking."

The Minnesota Center for Rural Health (MCRH) grew out of the consortium. "We needed a statewide entity to move forward," says Hill. Since its inception in 1990, the MCRH, composed of health care providers (including representatives from the Minnesota Medical Association and Minnesota Academy of Family Physicians), educators, and consumers, has worked to address rural health challenges. Recruitment and retention of rural practitioners is one of the top priorities. "Successful rural physician recruit-

ment has to start in the selection process," says Hill. "If a medical school enrolls a student from Edina, you'll rarely get that student to a rural area."

MCRH's recruiting and retention efforts continue throughout the student's education. The center has a summer internship program in rural medical practice, designed for medical students between their first and second years. "Once they're in med school, it's important to expose them to rural practice," Hill says. "We tell students rural practice isn't for everyone. But we also explain the rewards. They might put in more hours, but they are also a more intricate part of their communities."

Hands-on experiences expose students to the advantages of a rural practice. Hill says these include a varied choice of assignments, salaries nearly equal to urban practices', and the opportunity to become a part of a small-town community.

But Hill notes that medical students are changing in ways that make recruiting for rural areas even more difficult. "The students are looking for more than just a good medical practice," he explains. "Quality of life issues are more important to them. They don't want to be isolated; many have families. You might ex-

pect salary to be the No. 1 issue, but it's far down the list. According to a 1996 MCRH survey of new primary care physicians, practice partners was the No. 1 concern."

Retention is another problem, because of what Hill calls a "dysfunctional" recruiting system. In the past, the recruiter's incentive was to place doctors into practices, without much consideration for compatibility, Hill says. Consequently, a physician stayed at a rural practice an average of just over two years.

Through the MCRH, recruiting takes a different approach. "It's a little like a dating service," Hill laughs. "We try to identify the individual. What do they want? What do they need? We know that during their residencies, doctors don't have much time to look for a practice, so we put together a database of all practice opportunities in rural Minnesota. And we



PHOTOGRAPH BY JEFF FREY

start to work with them as soon as possible."

This refined recruiting process, which has resulted in more than 100 placements, benefits both the doctor and the community. For example, a doctor in Missouri was looking for a practice in a rural, underserved area in Minnesota as part of repaying a federal scholarship. The doctor and his family were members of the Mormon faith and wanted to live within 50 miles of a church.

So Hill and his colleagues got out a protractor and map and discovered that Grand Rapids, Minnesota, had a Mormon congregation. They also knew that Bigfork, just 45 miles away, was in need of a doctor and qualified for the scholarship program. The physician, his wife, and their five children settled into Bigfork, where the doctor was needed and the family could attend their church conveniently.

The MCHR publishes a retention and recruitment guide as well. "The guide stresses retention particularly," Hill says. "We urge communities to form a committee, not only to help recruit but to check periodically with local physicians to see how things are going. We're looking for long-term relationships here."

The center publishes another guide that helps rural areas plan for community health development. It also launched a telecommunications project that will eventually link rural hospitals and clinics and provide online

services such as telemedicine, data storage and transfer, and claims eligibility verification.

Despite the center's success, Hill says there is much more to do. "Some basic changes in delivery have to be made. Rural hospitals and clinics generally don't have enough expertise in managed care, and there is still a lack of various types of technical expertise," he says. "Minnesota has had nearly 30 hospitals close since 1987. Twenty-three of those were in rural communities."

Byron Crouse, M.D., director of the Rural Health School at the University of Minnesota-Duluth, says he thinks Hill is up for future challenges. "Terry is community-oriented, committed, congenial, and collaborative," says Crouse. "He gets out there and spends time in the trenches with the people we represent."

As rural communities diminish in size and number, the strong voice of an advocate becomes even more important, says Moose Lake's Christensen. "Minnesota isn't 50 percent urban and 50 percent rural anymore. That has all changed. We simply don't have the power we once had. That's why someone like Terry is so important to rural health."

MM

Julie Ahasay is a free-lance writer living in Duluth. Her profile of Dan Benzie, M.D., appeared in the June 1998 issue of Minnesota Medicine.

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John Stone, M.D.



A steady freezing rain began yesterday, gilding the pine trees when the sun went down and continuing, along with a high cold wind, as darkness fell. About 11 p.m., the pine trees started cracking, snapping like giant toothpicks. Pine trees are notorious for this sort of thing; birches, as every Robert Frost fan knows, bend over with ice. But pines break over houses, thumping to the ground like meteorites.

Five years ago, in another house and another storm, an ice-laden, top-heavy pine cracked and

crashed just in back of our house. Its fall split a beautiful dogwood exactly in two, splaying the halves like the cold steel of a scalpel. The dogwood's injury spared us a greater calamity, though; it had absorbed most of the heavy blow of the treetop

that otherwise would have ripped through the back door and on into the kitchen. A neighbor and I were up early the next morning, surveying the damage. We hatched a daring surgical plan to save the dogwood. He left to get his tools from his house: mine are always missing, though never in action. We

PHOTOGRAPH BY GENE JOHNSON/ARTVILLE

donned our operating garments. First we drilled holes in opposing surfaces of the split tree; then, heaving up the halves, we bolted the dogwood back together. The result would have pleased the most meticulous of orthopedists. To obtain extra support for our repair, we rigged wire struts among the branches of the dogwood. Finally, we sealed the fracture line with tree balm before the dogwood could even think of going into shock. It bloomed gloriously the next spring. Years later, I went back to that house expressly to see the dogwood; its orthopedic scars were, as we say in medicine, well-healed. It's still the prettiest dogwood in the neighborhood.

There go the lights! And with them the fan that runs the furnace. The darkness makes the whole house seem immediately colder. There's a rush for candles. The toilets still work, but the seats are soon as cold as those in an outhouse. At least the gas grill still works: we can heat hot dogs and soup. We lay a fire in the fireplace. And we have a portable radio for as long as the batteries last.

What we cannot know is how long the dark and cold will last. Whether the pines all around the house will continue to snap, with the threat of an awesome wooden missile crashing in on us. Whether we would be safer, if colder, in the basement of this house. How many power lines will come down. Whether the "cherry pickers" will be out in force tomorrow to pluck the pines, V-shaped and broken over the roofs of houses. And the deep-throated power saws. And the neighbors commiserating over split-rail fences, with chandeliers of ice cracking and clicking around them. But will any of us, suburban and relatively well-off, be forced to join the ranks of the homeless for a while? Not likely.

During the first 15 years of my professional life, I worked pretty much full time at a huge inner-city hospital. I spent a good deal of my time in the emergency department, where the homeless tended to congregate, especially when they were sick, but

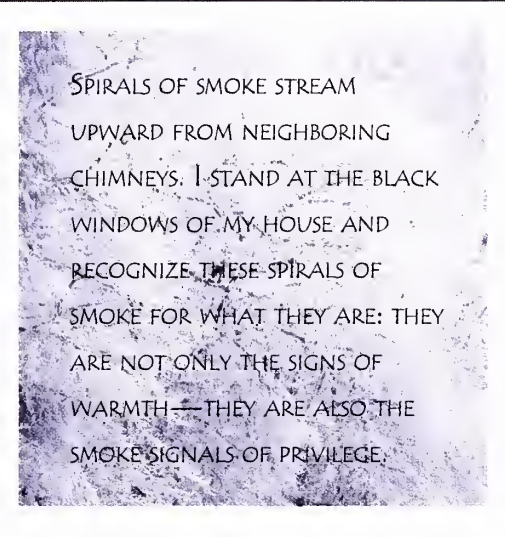
often simply to get in out of the cold. I think now of the homeless man who greeted me loudly and warmly as I peered in, white-coated, through the door of his room. "Come in!" he said. "All is forgiven!" I was taken completely aback. At the time, I had only the presence of mind to lock his words away in memory. I realize now I might have replied "I hope so" for all of us.

I think, too, of another patient who'd been brought to the hospital by ambulance, chilled to the literal bone. He had a body temperature of 78 degrees, too low to be measured on ordinary thermometers. Such profound and life-threatening hypothermia is all too frequent in our cities. A passerby had found the man under a bridge, his usual home whatever the storm. He had every appearance of near-death: unresponsiveness, a markedly slow and feeble pulse, a state of suspended animation, remarkably near hibernation. We warmed him inside (by having him breathe heated oxygen); we warmed him outside (with warming blankets and hot water bottles). Slower than Lazarus, but just as surely,

as amazingly, he came back to this world; and he lived to tell the tale, at least those parts he could remember.

Now, outside, in the ice storm, spirals of smoke stream upward from neighboring chimneys. I stand at the black windows of my house and recognize these spirals of smoke for what they are: they are not only the signs of warmth—they are also the smoke signals of privilege. They say we here will survive, come Fahrenheit, come Centigrade. But we knew that already.

Our sons are beside themselves. Their pupils are dilated. Something so exciting as to be almost illegal is going on. There's a strong likelihood the schools will be closed tomorrow. The boys bring their sleeping bags up from the basement and stretch out in front of the fire. The dachshund circles importantly, as though preparing for an attack. We decide to have S'mores: toasted marshmallows on a square of milk chocolate, squashed between saltine crackers. The



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miniature pops of the oak in the fireplace are faint compared to the wild crashing outside. No one is sleepy in this elemental house.

Ice storms, like nothing else in nature that I know, take us back to first things. I can imagine now our primitive ancestors who would find amusing our mild temporary discomfort. In a circle in front of the fire, we watch the flickering shadows on the walls of our own strange rectangular caves. We look for the meaning we hope is still there to be found. We listen, during the first quiet time in too long a time, for the sounds of our hearts, warming up the blood. MM

John Stone is professor of medicine at Emory University School of Medicine in Atlanta. He is author of five books, including "In the Country of Hearts" and "The Smell of Matches." He is co-editor of "On Doctoring: Stories, Poems, Essays."

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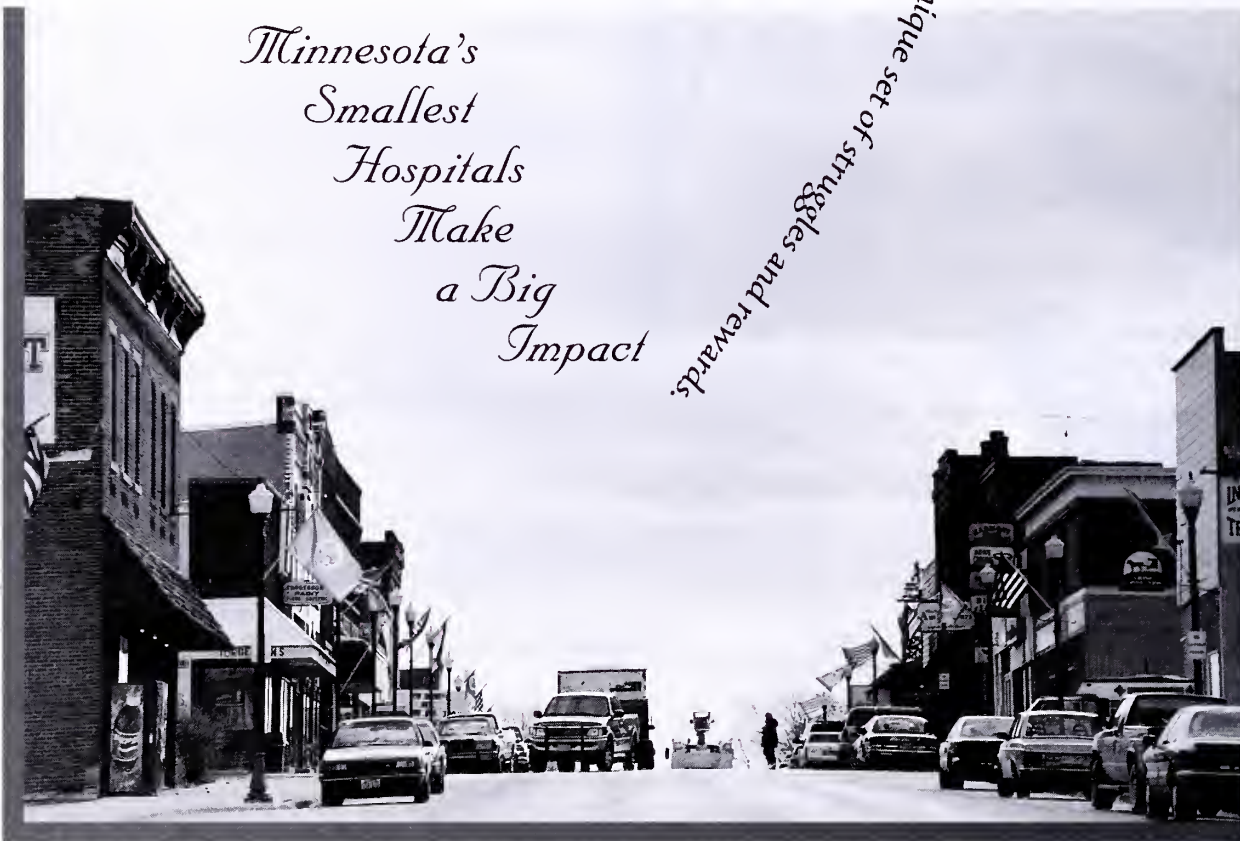
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Hospitals *in the* Heartland

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Minnesota's
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HARMONY PHOTOGRAPHS BY JOHN NOLTNER



by Jennifer Thistle

Editor's Note: More than 100 hospitals in rural Minnesota provide medical care in their communities. Here we profile five of the state's smallest hospitals and some of the physicians and administrators who keep them running.

Nestled in the midst of cornfields and hilly country roads in southeastern Minnesota, you'll find harmony. Make that Harmony, population 1,081, home to the smallest hospital in the state. At the eight-bed Harmony Community Hospital, across the street from Judy's Lane Guest House, the average daily census is two patients.

Across Minnesota, in small towns, on the Iron Range, near lakes and farmland, hospitals with eight, 10, or 16 beds work hard to serve their communities, even if that happens to mean just a few patients at any given time. In Harmony and other small towns, the hospital is an important part of the community. If the facility is facing a financial crunch, community residents may well pitch in to help with fund-raisers and volunteer work. In a small hospital, patients—many of whom are older people—are likely to know and trust their doctor.

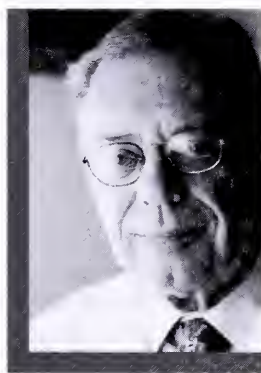
For physicians, practicing in a rural hospital means relying more on clinical skills and hands-on work than high-tech tests and equipment. Recruiting physicians to rural areas is a constant struggle for hospital administrators; many are grateful for the federal State 20 program, which brings foreign medical residents to physician shortage areas.

Harmony

It seems fitting that in a town called Harmony, the hospital is characterized by a sense of interconnectedness—the dependence of one thing upon another, the

ability and willingness of people to take on more than one responsibility. Harmony Community Hospital is part of what hospital administrator Greg Braun calls a “cost-effective system” that comprises the hospital, the town nursing home, and a clinic. The clinic also has two other sites, in Lanesboro and Preston.

“None of our entities would survive alone. That would be too expensive,” says Braun, who also serves



*Harmony physician
Dr. John Nebring*

as administrator for Tweeten/Lutheran Health Care Center, Minnesota’s third smallest hospital, in nearby Spring Grove.

Harmony Community Hospital, which turns 50 this year, has a staff of about 80, along with a nurse practitioner, a physician assistant, and three staff physicians. “The staff here is great,” Braun says. “Just about everyone has to wear more than one hat. For example, our head nurse also does quality management. We have to be sure we provide the best care.

Our various roles help us understand the diverse jobs necessary to keep the hospital up and running.”

Braun admits that recruiting physicians has been difficult. “So many physicians want the big-city life, and the closest we have to that is Rochester or La Crosse,” he says. “We have to sell the positives in southeastern bluff country—the outdoor activities and the scenery, which we like to consider our secret.”

To help fill physician vacancies, Braun and other rural hospital administrators have turned to the State 20 program. This federal program draws foreign physicians who have completed residencies in the United States to areas where physicians are needed most—usually rural areas. Each year, the federal government allows Minnesota to place up to 20



Harmony nursing home patients Sam Bigalt, left, and Ernest Bates



physicians in shortage areas around the state.

One doctor who came to Harmony by way of the State 20 program is Santhi Vege, M.D. Originally from Bombay, India, Vege served as the head of gastroenterology in India's largest cancer hospital, Tata Memorial Hospital, which treats about 20,000 patients a year. Vege and his wife decided they wanted to raise their two children in the United States, so he obtained a J-1 visa, which allowed him to complete his residency program in the United States. After finishing an abbreviated residency at Mayo Clinic, which was shortened because of credit for past medical experience, he signed a three-year contract with a hospital in a physician shortage area—a condition of the State 20 program.

Vege began practicing in Harmony about a year ago, joining Robert Sauer, M.D., a physician from Preston who joined the hospital's staff in 1995, and John Nehring, M.D., who has been a staff physician at Harmony since 1978. Nehring's father, J.P.

Nehring, also practiced at Harmony; he was one of the first physicians to admit patients when the hospital opened its doors in 1948. Sauer and Nehring live in the Harmony area, unlike Vege, who commutes an hour from his Rochester home to work in the clinic and hospital. Vege also covers shifts at the Lanesboro and Preston clinics, and he is on the Mayo Medical School faculty, where he teaches internal medicine to residents.

"The State 20 program fulfills the needs of three groups: the rural physicians, the rural communities, and the state, which is responsible for placing physicians where they are needed," Vege says. After three years in Harmony—during which he may seek U.S. citizenship if he chooses—Vege can continue practicing there or look for work elsewhere.

Lawrence Colaizy, provider recruitment and retention coordinator for the Minnesota Department of Health, Office of Rural Health and Primary Care, judges Minnesota's State 20 program a success. "The

J-1 visas increase the pool of available doctors and make it easier to find the right doctor for an area's need," Colaizy says. "We're starting to see increased interest in the program, and we're optimistic that doctors will stay in the areas of their three-year commitment beyond the three-year minimum requirement."

He credits much of the program's success to hospital administrators. "[They] are careful about the selection process to ensure good matches for their communities, and they have proven that selectivity works," he says. "It's important that physicians are happy—three years can be a long time in the wrong place."

For Vege, practicing in a small town offers an interesting change from big-city practice. "Basically, the uniqueness of Harmony is the patient population," he says. "The people in rural Minnesota are friendly, easy to deal with for their medical needs, and they respect the doctors a lot."

He also notes that the Harmony hospital does not have as much technology as big hospitals: "Instead, we rely much more on our clinical skills. When I found out I'd be at an eight-bed hospital, I thought it would be an exciting challenge. Having worked with people all over the world, it makes me happy to work in Harmony, where everyone is so grateful."

Westbrook

About an hour from Harmony in the southwest corner of the state is Westbrook, another physician shortage area, where Jetinder Singh, M.D., originally from Kenya, East Africa, practices. Singh transferred from University Hospital of Illinois, a 440-bed teaching hospital in Chicago, to join the 13-bed Westbrook Health Center.

"Moving from Chicago to rural Minnesota was certainly a change, but I felt I was moving to a decent community where I could raise a family," says Singh, who came to Westbrook a year ago with his wife, a veterinarian in Westbrook, and their 5-year-old son.

Like Vege, Singh has discovered that he's more apt to use his clinical skills in a small hospital than in a large one. He can't order medical tests on demand, and he doesn't have many physician colleagues to turn to for advice. In fact, Singh, an internist, is one of only two staff physicians; the other is Jeff Cassel, M.D., who has practiced at Westbrook Health Center for 18 years. A full-time general practitioner, Cassel is also a grain farmer.

Singh says he enjoys working in Westbrook and plans to stay. "The people are great, and the cost of living is a lot less." He also appreciates the community spirit. "After working in a big-city hospital and coming to a small town, you see the people are so proud of what they have," he says.

In this town of 850 people, residents want to see their hometown hospital survive. During hard times, private donations have kept Westbrook Health Center out of the red.

The hospital continues to face some challenges. For one thing, the hospital and clinic are a mile apart. Because the clinic doesn't have lab and x-ray capabilities, patients must make the trip to the hospital for these procedures. According to CEO Tom Quinlivan, that situation will improve in the next year, when a \$1.7 million building project will put the hospital and clinic in one location.

Quinlivan hopes to upgrade the hospital's technological capabilities as well. "We don't have the most elaborate computer system for billing purposes," he says. "But that will be changing once the new facility is done."

Quinlivan also struggles with the ever-present problem of recruitment. "It's hard to recruit physicians in rural Minnesota," he says. "Rural health involves a lot of hands-on [work], and that's difficult for some people to comprehend."

Rural physicians often see patients outside their specialties. They also handle many routine tasks themselves, such as making phone calls, which nurses or assistants typically do at larger facilities. Quinlivan



BRIAN KORTHALS

Dr. Jetinder Singh practices in Westbrook.

knows what it's like to juggle a wide array of duties. His own responsibilities range from drafting contracts to coordinating fund-raisers to writing business plans.

Singh says he has adjusted well to life as a rural physician. "The patients I see and the city's residents allow me to feel accepted here. And all the children in my son's kindergarten class know me by name."

Aurora

White Community Hospital in Aurora, on the eastern edge of the Iron Range, is an icon of this close-knit community.

"The employees have a direct connection to the community, and having a community hospital allows residents to stay within the area to receive care—

Other Small Hospitals in Minnesota

Mahnomen Health Center is in northwestern Minnesota, within the boundaries of the White Earth Indian Reservation.

- Licensed for 18 beds.
- Attached to a 48-bed skilled nursing home and medical clinic.
- Employs two full-time primary care physicians and one full-time physician assistant.
- Medicare covers 70 percent of the hospital's inpatient services.
- Approximately 24 percent of the population in and around Mahnomen is Native American.
- Mahnomen Health Center's emergency department receives more than 2,300 visits each year.

Divine Providence Health Center is in Ivanhoe, a town of 750, just east of the South Dakota border.

- Licensed for 18 beds.
- Two full-time independent physicians, including one who serves as a state legislator, work at the hospital.
- All the money used to build the hospital 31 years ago was raised or donated from within the Ivanhoe community.
- The hospital has a 24-hour emergency room, an operating room, and a labor and delivery suite, and it offers physical and occupational therapy.
- The hospital is attached to a 51-bed nursing home and a seven-unit congregate care home, as well as a convent with seven nuns and a resident priest.

Arnold Memorial Health Care Center, in Adrian, population 1,100, opened in 1959.

- Licensed for 9 beds.
- The clinic employs one physician and one physician assistant.
- The hospital, clinic, 41-bed nursing home, and 12-

room assisted living service are in one facility.

- The hospital and clinic see mostly primary care patients, but the facility also houses detox and outpatient chemical dependency services.
- Adrian shares some services with nearby health care facilities in LuVerne.

Tweeten/Lutheran Health Care Center, in Spring Grove, is in southeastern Minnesota.

- Licensed for 10 beds.
- The hospital employs one full-time physician, one full-time physician assistant, and one part-time physician assistant.
- The hospital is connected to a clinic and 71-bed nursing home. The health care center also provides home care and transportation services.
- Physical therapy and occupational therapy are available at the hospital.
- Contracts with Gundersen Lutheran Medical Center for physician and physician assistant medical coverage.

Cook County North Shore Hospital, 110 miles north of Duluth, is located in Grand Marais, a town that attracts a lot of tourists and outdoor enthusiasts. The North Shore industry consists of tourism, logging, casino jobs, county government, and retired people.

- Licensed for 16 beds.
- The hospital is connected to a clinic and 47-bed nursing home.
- The hospital doesn't employ staff physicians, but the clinic's staff physicians are on call for the hospital's ER and admit patients to the hospital.
- The ER receives about 2,000 patient visits a year. Forty to 50 percent of those admitted are visitors to the area.
- The hospital handles only low-risk births; cesarean sections and multiple births are referred elsewhere.

that's a big plus," says Paula Schaeftbauer, assistant administrator at White Community Hospital.

The last time the 16-bed hospital employed a staff physician was 1973. Today, 25 physicians from the Iron Range and Duluth areas share hospital privileges. Two local family practitioners, Darrell Leier, M.D., and Chris Whiting, M.D., who work mainly at Duluth Clinic-Aurora, provide the majority of care at White Community Hospital.

"Dr. Leier and I are on call at the hospital Monday through Friday, and I generally stop in every day to do rounds—provided there's a patient I've admitted," says Whiting. "On-call can be a challenge because of the frequency of calls—we're actually hoping to find a third physician to join the clinic staff who can also help with the weekly on-call hospital schedule."

Whiting lives on Lake Embarrass, near Aurora, with his wife and four children. "One opportunity of practicing in a small town is that I know the people I'm treating," he says. "There's a feeling of satisfaction when I can help a neighbor or a friend."

Schaeftbauer echoes that sentiment. "Being a small community hospital allows employees to have more of a connection to the community, and that generates lots of pride and loyalty," she says.

Town pride in White Community Hospital was particularly evident about 10 years ago, when the emergency room was at risk of closing. In the mid-1980s, the economy on the Range was weak, the mines were letting workers go, and too few physicians were available to cover the ER. The hospital,

clinic, and community rallied. With the support of area physicians, generous local contributions, and volunteer hours, the ER survived.

The hospital recently added a physical therapy and cardiac rehabilitation center and has other building projects scheduled for the next 15 years. "We're very pleased to be able to expand and offer additional services," Schaeftbauer says. "This is only the beginning of the remodeling, and we're very excited about it."



Drs. Darrell Leier and Chris Whiting at White Community Hospital in Aurora.

Ada

After devastating floods in the spring of 1997 destroyed Bridges Medical Services of

Ada, Minnesota, the hospital was forced to relocate temporarily, then rebuild. It will rebuild yet again before it's back in full commission.

An old railroad depot turned American Legion clubhouse served as the temporary clinic for much of 1997. "The flood disrupted the city for a whole year—things were really chaotic," says Bridges chief of staff Jerry Brown, M.D., who moved to Ada in 1992 with his wife and joined the hospital staff.

By the end of 1999, the flood will recess to memory as Bridges Medical Services starts fresh in a new, 76,000 square-foot facility, complete with a 14-bed hospital, clinic, and 49-bed skilled nursing home.

"We've definitely had improvements since the flood," says Brown. "We were struggling—and still are a little—but there have been some real positive changes."

The first example Brown mentions is the addition of Viorel Gheorghe, M.D., a native of Brasov, Romania, who was hired at Bridges soon after the floods.

He is trained in general surgery and primary care. "In Dr. Gheorghe we've found a physician who wants to stay, and the community is positively receptive to that," Brown says.

Another Romanian physician will be joining the hospital staff by January 1999. Camelia Florea, M.D., practiced obstetrics/gynecology in Romania and is currently finishing as chief resident in internal medicine at the



Ada will have a new hospital by the end of 1999.

460-bed New York Medical Center of Queens. In Ada, a farming community of approximately 1,700, she will work as a general practitioner, with an emphasis on women's health.

Florea says she is looking forward to her new job. "I can't avoid the fear of a different setting, but I'm more excited than scared. On my first visit to Ada, I

was very impressed because the community and staff showed so much enthusiasm for the new hospital facility," she says. "It's a small community and it reminds me of Braeli, my hometown in Romania. Braeli was a larger city, but both towns are agricultural and the people seem to live similar lifestyles."

As a participant in the State 20 program, Florea will work at least three years at Bridges Medical Services. At the

same time, her husband will likely finish a medical residency in the Fargo area.

Bridges Medical Services administrator Kyle Rasmussen is looking forward to her arrival. "Dr. Florea is going to do really well," he says. "Dr. Gheorghe knows her from New York, where they had common physician friends, and we're excited to have her on board. Our goals for the hospital are high."

Brown is equally optimistic. "We'll be in a new building, with new, enthusiastic staff members. We have so much to look forward to. It goes to show that sometimes out of pain comes the birth of good things."

Albany

Minnesota's eighth smallest hospital sits next to North Lake in Albany, a town of 1,500 in central Minnesota. Albany Area Hospital and Medical Center, with 17 beds, is staffed by three full-time physicians, two part-time physicians, a physician assistant, and a nurse practitioner. Patients come from a 30-mile radius.

Full-time physicians Daron Gersch, M.D., Patrick Heller, M.D., and Phillip Holmes, M.D., take turns covering the hospital's emergency room, along with

the hospital's nurse practitioner and physician assistant. The hospital also employs two part-time physicians, Richard Salk, M.D., and Burton Bancroft, M.D., who do not cover ER shifts. Today, Gersch is on call. In the middle of his regular hospital and clinic rounds, he's called to the ER.

Behind a curtain lies an elderly man who must decide whether to have cardiac treatment at a nearby St. Cloud hospital or make the hour-long ambulance trip to a Twin Cities hospital. His deliberation is intense.

"Sir, I cannot send you somewhere that you don't want to go," says Gersch calmly, explaining that St. Cloud is the nearest and safest option. "This is a race against time—and we don't know how much time there is. You have a blocked artery interfering with the blood flow to your heart, and time could be your enemy or your friend."

"I cannot make the decision for you, but if you were my father, I would urge you to get to St. Cloud as quickly as possible," Gersch continues. "They have good cardiologists there, but it's your choice. Once your decision is made, we can get you on your way."

The cardiac patient, who has adult children in the Twin Cities, remains undecided. Finally, he instructs his wife to take his wallet and keys. She kisses him good-bye, and the paramedics wheel the man to the ambulance for his trip to the Twin Cities.

"Patients who don't take the advice of physicians used to bother me a lot," Gersch says. "But when I know they've made an informed decision despite the risks involved, there's not much more I can do."

Unlike many of the state's rural hospitals, Albany Area Hospital and Medical Center is surrounded by competing hospitals, in Paynesville, Melrose, Sauk

TERRY ROCKER



Ada's Dr. Viorel Gheorghe

ANDRA VAN KEMPEN



Albany's Dr. Daron Gersch

Centre, and St. Cloud. And the Twin Cities are just over an hour's drive.

"We're in a particularly competitive market, but this is a large service area, and there are a lot of needs," says hospital administrator Ben Koppelman. "I think there's more incentive in small hospitals to provide a higher level of care simply because we know the people and the families we serve."

Within the past couple of years, the hospital has remodeled inpatient rooms to make them more inviting. Staff members transformed the formerly drab rooms by decorating them in themes—library, gardening, golf, and loon, to name a few. The improvements included new countertops, wallpaper, paint, stenciling, and knickknacks. Local businesses, the hospital, and employees helped fund the project, but it was staff members' time and effort that really made the difference, Koppelman says.

Still, some Albany residents and those from nearby towns choose larger hospitals for their care. "There's a huge stigma that bigger is better," says

Albany chief of staff Gersch. "We can see people for all different medical matters, but the people don't know that."

Gersch says he always pictured himself as a physician who would do a little bit of everything in his practice. "I enjoy getting to know the people I see on a regular basis for a wide range of needs," he explains. Gersch, who has worked at the Albany hospital for four years, lives seven miles away in Avon, Minnesota, with his wife, 6-year-old son, and 3-year-old daughter.

"I really like to help people. I'm fascinated with the human body and how it works and how I can fix things," Gersch says. "And for working with a range of patients, it's nice to work in an attached hospital and clinic setting. The hospital and clinic here have lots to offer. Our job is to show people that their needs can be met in their own backyards." **MM**

Jennifer Thistle is MMA outreach field representative.

Minnesota's Smallest Hospitals

Hospital	Licensed beds 1998	Acute care admissions 1996	Average daily census 1996	Location
Mahnomen Health Center	18 beds	150	1	Mahnomen
Divine Providence Health Ctr	18 beds	170	2	Ivanhoe
Albany Area Hosp & Med Ctr	17 beds	363	3	Albany
Cook County North Shore Hosp	16 beds	207	1	Grand Marais
White Community Hospital	16 beds	261	2	Aurora
Bridges Medical Services	14 beds	242	2	Ada
Westbrook Health Center	13 beds	131	1	Westbrook
Tweeten/Lutheran Health Care Ctr	10 beds	105	1	Spring Grove
Arnold Memorial Health Care Ctr	9 beds	34	0	Adrian
Harmony Community Hosp	8 beds	163	2	Harmony

Data provided by the Minnesota Hospital and Healthcare Partnership.

Choosing a Family Physician

What Do Patients Want to Know?

Suzanne Engstrom, B.S., and Diane J. Madlon-Kay, M.D.

ABSTRACT

What type of information do patients find valuable when choosing a family physician? At a suburban Midwestern clinic, 221 adults rated the value of 12 demographic items and eight attributes pertaining to physicians. Of the demographic information, board certification was most valued by respondents; all personal attributes listed were rated very highly. Although 44% of women preferred a female physician, 93% of women agreed that, in general, male and female family physicians are equally competent. In summary, a physician's personal attributes and characteristics are of most importance to consumers when choosing a family physician. With the exception of board certification status, information about a physician's training or demographics is of much less value to patients. In addition, the information identified as most important in the survey is not typically provided by managed care organizations.

Magazine and newspaper articles with titles like "How to Choose a Doctor at Your HMO" or "The ABCs of Choosing a Good M.D." offer advice to the growing number of people who must select a primary care physician from a list supplied by their employer's managed care plan. These articles advise the consumer to seek such information as a physician's medical school and residency training, board certification status, affiliation with a teaching institution, and membership in medical societies and associations, as well as information about malpractice suits and disciplinary actions.¹⁻³

Some managed care organizations provide information about their physicians to consumers. In Minnesota, one large managed care organization has placed computer kiosks with touch screens in locations around the Twin Cities.⁴ Patients can obtain the name, specialty, clinic, and care system of all physicians in the organization. In addition, physicians are encouraged to provide a photograph for the kiosk as well as information about their professional and personal interests, training and education, and what languages they speak.

A 1996 national survey examined the level of consumer interest in some of this physician information.⁵ The telephone survey of 2,006 adults cosponsored by the Agency for Health Care Policy and Research and the Kaiser Family Foundation asked respondents how much influence certain information was likely to have on their choice of a new doctor. Seventy-one percent reported that a physician's board certification status had considerable influence on their choice. Respondents also reported that these factors had a lot of influence on their choice: num-

ber of years in practice (35%), whether a doctor attended a well-known medical school or training program (30%), a doctor's age, race, or ethnic background (10%), and a doctor's gender (8%).

The greatest number of respondents (84%) reported that "how well a doctor communicates with patients and shows a caring attitude" influences their choice. Previous studies have consistently confirmed that patients place the most value on physicians' interpersonal skills.⁶⁻⁸

The purpose of our study was to further investigate the type of information patients find valuable when choosing a family physician. We studied patient interest in physician demographics and personal attributes as well as patient preferences for male or female family physicians.

METHODS

We conducted the study at a suburban Minneapolis/St. Paul family practice clinic with four female and six male family physicians. A 15-item written questionnaire was developed, pilot tested at the clinic, and then revised. In the fall of 1995, clinic receptionists were instructed to ask all adult patients to complete questionnaires while at the clinic.

One question asked respondents how valuable it would be to know or see 12 types of information about a physician when choosing their family physician. It also asked patients about the importance of eight physician attributes or characteristics when selecting a family physician. Both questions had a three-point Likert scale response format. The survey also included questions regarding physician gender preferences and patient demographics. Categorical comparisons of patient characteristics by physician information or at-

Table 1

Value of information about a physician when choosing a family physician

Information	Very Valuable	Valuable	Not Valuable	p value
Board certification	56.1%	33.6%	10.3%	
Medical school attended	28.2%	45.1%	26.8%	
Residency attended	23.2%	42.2%	34.6%	
Age	7.7%	40.9%	51.4%	
Sex of physician	13.9%	30.6%	55.5%	
Patient gender				<.05
Female patients	17.1%	31.7%	51.2%	
Male patients	2.5%	25.0%	72.5%	
Languages spoken	12.9%	29.7%	57.4%	
Number of children	2.9%	25.2%	71.9%	
Patients' mean age (years)	35.6	40.4	46.5	<.05
Patients' number of children				<.05
0	0%	24.0%	76.0%	
1	16.7%	41.7%	41.7%	
2	0%	30.9%	69.1%	
3	3.4%	19.0%	77.6%	
4	0%	15.8%	84.2%	
5	0%	22.2%	77.8%	
6	0%	16.7%	83.3%	
7	0%	50.0%	50.0%	
Hobbies/interests	1.9%	24.8%	73.3%	
Marital status	1.4%	22.4%	76.2%	
Race or ethnic group	2.4%	20.2%	77.4%	
See a photograph	1.0%	20.2%	78.8%	
Patient gender				<.05
Female patients	0%	22.2%	77.8%	
Male patients	4.9%	14.6%	80.5%	
Religion	1.0%	19.6%	79.4%	

80% of respondents were women and 78% were married. The respondents had a mean age of 45 years and a mean of 2.5 children. Sixty-four percent of respondents had completed high school or less; 24% had completed college.

Eighty-eight percent of respondents had a family physician whom they saw for most medical problems. These physicians had been their family physicians for a mean of 9.6 years. Fifty percent of the respondents reported having a female family physician; 90% of respondents had had at least one office visit with a female physician.

Respondents were asked how valuable it would be to know or see the 12 demographic items about a physician when choosing their family physician (see Table 1). Board certification status was felt to be very valuable by the greatest number of respondents (56%), followed by the medical school attended (28%), and residency attended (23%). Relatively few respondents felt it very valuable to know a physician's religion (1%), see a photograph (1%), or know a physician's marital status (1.4%).

Patient demographics were significantly associated with respondents' different levels of interest in some of the information. Differences in responses by patient gender are described later. Younger respondents (see Table 1) and respondents with one child were more likely to say that it was very valuable to know how many children a physician has.

Respondents were also asked how important eight personal attributes or characteristics were when choosing a family physician (see Table 2). Although all eight characteristics were

tributes were statistically assessed using chi-square analyses. We used t-tests to assess continuous data.

RESULTS

Two hundred twenty-one questionnaires were completed and returned;

rated highly, the phrases "takes your concerns seriously" and "explains results and options clearly" were felt to be very important by the greatest number of respondents (98%). The fewest respondents (36%) felt it was very important that the physician have a sense of humor.

Patient demographics were also associated with differing levels of interest in several of the physician characteristics. Younger respondents were more likely to report that it was very important that the physician show emotions and be humorous (see Table 2). Patients with less education were more likely to report that it was very important that the physician show emotions and take charge of decision-making. Patient gender was significantly associated with different levels of interest in physician information and characteristics. Women respondents were more likely than men to say that knowing the gender of the physician was very valuable (see Table 1) and that it was very important that the physician show emotion (see Table 2). Women also placed different value than men on seeing the physician's photograph (see Table 1).

Other gender differences in responses are shown in Table 3. Significantly more female than male respondents had a female family physician. While 36% of all respondents preferred a female family physician and 52% had no preference, significantly more female respondents preferred a female family physician. Younger patients also preferred a female physician. The mean age of respondents preferring a male physician was 53.2 years; those who said they preferred a female physician had a mean age of 42.1 years; and those

with no preference, 45.4 years ($p < .01$). Ninety-two percent of all respondents agreed that, in general, male and female family physicians are equally competent.

DISCUSSION

The respondents overwhelmingly re-

ported that a physician's characteristics and attributes are more important than specific demographic information. Respondents rated all eight of the personal attributes listed in the questionnaire as more important than 11 of the 12 types of physician data listed. The exception—board certifi-

Table 2

Importance of attributes or characteristics of a physician when choosing a family physician

Characteristic	Very Important	Somewhat Important	Not Important	p value
Takes your concerns seriously	97.7%	1.8%	0.5%	
Explains results and options clearly	97.7%	1.8%	0.5%	
Spends time with you; is not hurried	91.6%	7.9%	0.5%	
Easy to confide in	89.4%	9.7%	0.9%	
Listens without interrupting	86.6%	12.0%	1.4%	
Takes charge of the decision-making	48.6%	45.4%	6.0%	
Patient education level:				<.01
Some high school	87.5%	6.3%	6.3%	
Completed high school	51.7%	44.9%	3.4%	
Completed college	35.3%	52.9%	11.8%	
Completed graduate degree	34.8%	56.5%	8.7%	
Shows emotion	43.5%	47.7%	8.9%	
Patients' mean age (years)	44.2	44.0	53.8	<.05
Patient gender:				<.05
Female patients	47.3%	46.2%	6.5%	
Male patients	31.7%	51.2%	17.1%	
Patient education level:				<.01
Some high school	60.0%	20.0%	20.0%	
Completed high school	53.4%	42.2%	4.3%	
Completed college	32.7%	57.7%	9.6%	
Completed graduate degree	21.7%	60.9%	17.4%	
Humorous	35.5%	53.7%	10.7%	
Patients' mean age (years)	44.3	43.8	54.9	<.01

Table 3

Patient preference for family physician gender
(FP = family physician)

	Male patients %	Female patients %	p value
Gender of current FP			
Male	82.4	58.3	<.001
Female	17.6	41.7	
Preference for gender of FP			
Male	27.9	7.7	<.001
Female	11.6	43.8	
None	60.5	48.5	
Competence of FP			
Males more competent	4.7	1.8	.47
Females more competent	7.0	5.3	
Equally competent	88.4	93.0	

cation status of the physician—was reported to be of more value than only three of the personal attributes.

This study confirms prior reports that a doctor's approachability and manner are by far the most important qualities patients look for in a family physician.⁵⁻⁸ Most patients rely on personal recommendations from family and friends when choosing a new doctor, perhaps because this type of information is hard to obtain from other sources.⁵ The provision of more physician demographic information by managed care organizations is unlikely to alter what has been described as "a remarkable lack of consumerist behavior in the way that people choose their doctor."⁸

The value this study's respondents placed on physicians' board certification status appears to be relatively new. In a 1981 survey of approximately 5,000 adults in four states, most respondents either did not know about board certification or else thought it indicated nothing about a physician's skills.⁹ More recent surveys confirm this study's findings of patient interest in board certification. In a 1992 telephone survey

of Kentucky adults, however, respondents' interest in board certification status was incongruent with their actual knowledge.¹⁰ Although 95% of the adults surveyed thought it was somewhat or very important to them that their physician be board certified, only 65% knew their physician's board certification status. Specialty board certification is increasingly used as an indicator of clinical competence by hospitals and managed care organizations.¹¹ Some managed care organizations only allow board-certified family physicians to participate in their plans. The American Board of Family Practice and the American Academy of Family Physicians strongly oppose this use of board certification status and have sent a joint statement to that effect to managed care organizations.

Finally, this study confirms previous findings that many female patients prefer female physicians.¹²⁻¹⁴ This preference appears not to be based on a belief that female physicians are more competent than males; 93% of the female respondents agreed that, in general, male and female physicians are equally competent.

Studies suggest that male and female physicians have different practice styles.¹⁵⁻¹⁷ This may explain the greater patient satisfaction with female physicians, particularly among female patients.^{15,16} Studies have also shown a positive relationship between patients' satisfaction with their physicians and patients' compliance with their therapeutic regimens, suggesting that better physician-patient relationships might lead to improved patient care.^{15,17}

This current study has several potential limitations. It was conducted in a suburban Midwestern clinic, and the respondents were primarily white, married females. Although the respondents were relatively homogeneous, our findings are very similar to those of a recent national study of a more diverse population.⁵ Clinic receptionists were asked to give questionnaires to consecutive adult patients, but practice constraints probably made that impossible. The study was conducted at a single-specialty clinic, so all respondents were familiar with the specialty of family practice. Moreover, the clinic had a large percentage of female physicians, and most respondents had at least one visit with a female physician.

CONCLUSION

In summary, for consumers choosing a family physician, a physician's personal attributes and characteristics are of most importance. With the exception of board certification status, information about a physician's training or demographics is of much less value. Consumers trying to choose a family physician will not find the information most important to them on a computer kiosk or other sources provided by managed care organizations. Almost half of the women surveyed (44%) prefer a female physician, probably because of their practice style. Both male and female physicians should strive to improve their communication skills, thereby improving not only patient satisfaction, but also patient compliance and health. MM

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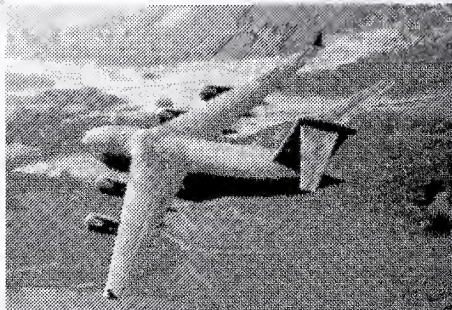
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Childhood Cancer Incidence and Trends in Minnesota, 1988-1994

Andrine R. Swensen, M.S., and Sally A. Bushhouse, D.V.M., Ph.D.

ABSTRACT

Childhood cancer incidence patterns for Minnesota, obtained from the Minnesota Cancer Surveillance System, were compared with national rates as well as with historic data from eight Minnesota counties. In total, 1,140 neoplasms were diagnosed in children (ages 0 to 14) between 1988 and 1994. Leukemias were the most common diagnosis for boys (30.3%) and girls (29.6%), followed by central nervous system tumors. The average annual age-adjusted incidence rates for all cancer sites were 167.2 and 136.2 per million for boys and girls, respectively. These rates were somewhat higher than national rates. In particular, the incidence rate for astrocytoma in boys was significantly elevated. Childhood cancer incidence, particularly brain tumors, has increased in the eight-county region from 1969 to 1994. This analysis demonstrated that Minnesota's childhood cancer incidence patterns are similar to national patterns.

The incidence of childhood cancer in the United States has been increasing over the last few decades.^{1,2} A recent report estimated that childhood cancer incidence rates rose by an average of 1% each year between 1974 and 1991.³ In particular, the incidence of central nervous system (CNS) tumors increased by an average of 2% per year. These increases are especially alarming because to date, few risk factors have been elucidated. The striking variations in age-specific childhood cancer incidence rates between boys and girls and among different racial groups most likely represent etiologic clues that need to be deciphered. For example, acute lymphoblastic leukemia (ALL) incidence peaks for children between the ages of 2 and 5 and is more common in boys than girls. Additionally, this peak was observed in the 1930s among white children, but not until 30 years later in black children.^{4,5} This peak has always been more pronounced for white children. In monitoring the changing incidence patterns of childhood ALL, researchers have proposed a number of different etiologic hypotheses that are currently being investigated.⁶

The purpose of our study was threefold: 1) to document the incidence of childhood cancer in Minnesota from 1988 to 1994; 2) to compare current childhood cancer rates in Minnesota with national rates; and 3) to explore trends in Minnesota childhood cancer incidence over time.

METHODS

To calculate current rates, we used incidence data collected by the Minnesota Cancer Surveillance System (MCSS) since its inception in 1988. The MCSS is a population-based, pathology-based, active surveillance

system. It collects information on CNS tumors of benign and uncertain behavior in addition to malignant diagnoses. A 1996 external audit estimated that MCSS data were over 99% complete.⁷ Historical childhood cancer incidence data were obtained from the Third National Cancer Survey (TNCS) and from the Minnesota Department of Health Tri-County Cancer Survey. The TNCS collected cancer incidence data between 1969 and 1971 in several regions in the United States, including the Twin Cities metro area—specifically, Anoka, Dakota, Hennepin, Ramsey, and Washington counties. The Tri-County Survey monitored cancer incidence for Cook, Lake, and St. Louis counties from 1969 to 1976. The Tri-County Survey was designed to investigate the impact of taconite waste on cancer incidence in the Minnesota counties bordering Lake Superior.

We used population data from the 1990 U.S. Census and intercensal estimates for 1988-89 and 1991-94 to calculate national cancer incidence rates. We used data from the Surveillance, Epidemiology, and End Results Program (SEER) and Cancer in North America (CINA) for comparison. The SEER rates were calculated from data reported at nine sites throughout the nation from 1990-94. These SEER sites represent about 9.5% of the U.S. population.⁸ CINA rates were compiled from data from 24 population-based registries in the United States. The CINA rates included in this analysis were based on data from 1988 to 1992.⁹

We classified pediatric tumors into histologic groups using the International Classification of Childhood Cancer and the International Classification of Diseases for Oncology coding systems.¹⁰ Unlike adult cancers, which are usually grouped

Table 1

Percentage distribution of childhood (ages 0-14) cancer cases by cancer type and sex in Minnesota, 1988-94

Cancer Type*	All Races	
	Males (n=637)	Females (n=503)
Leukemias	30.3	29.6
Lymphoid leukemia	24.2	23.7
CNS and miscellaneous intracranial and intraspinal neoplasms†	25.3	23.9
Astrocytoma	11.9	10.5
Sympathetic nervous system tumors	6.4	8.2
Soft tissue sarcomas	6.3	5.8
Renal tumors	5.2	5.8
Malignant bone tumors	4.1	5.0
Epithelial neoplasms	3.3	5.8
Hepatic tumors	2.4	1.2
Retinoblastoma	2.0	3.0
Germ cell, trophoblastic, and other gonadal neoplasms*	1.4	4.8

* grouped according to the histologic groupings of the ICCC

† includes benign (16% of CNS tumors and 3% of germ cell tumors)

Fig. 1 Case Distribution of Acute Lymphoblastic Leukemia in Children in MN, 1988-94

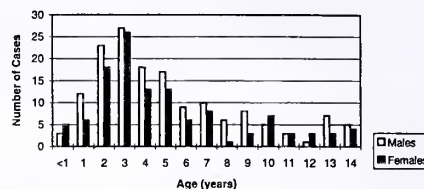


Fig. 2 Incidence Rates of Acute Lymphoblastic Leukemia in Children in MN, 1988-94

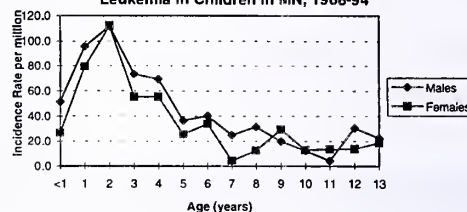


Fig. 3 Case Distribution of CNS Tumors in MN, 1988-94

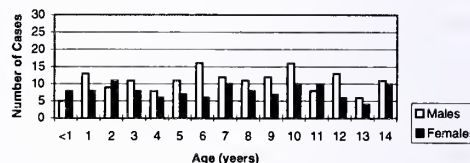
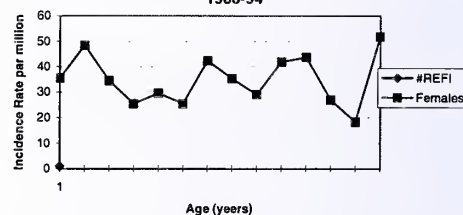


Fig. 4 Incidence Rates of CNS Tumors in MN, 1988-94



according to primary site, pediatric cancer is best described by the histologic (cell) type. We excluded CNS tumors of benign and uncertain behaviors from most analyses because SEER and CINA data do not include them.

Age- and sex-specific incidence rates were calculated for the different types of childhood cancer. We used one-year age categories, because the incidence of childhood cancer varies dramatically between these categories. Because only 3.3% of the cases involved non-white children, we did not include race-specific incidence rates. Rates were reported as the number of malignancies per million children per year. To calculate age-

adjusted rates, we applied the direct standardization method to the 1970 United States population.¹¹ Further, standardized morbidity ratios (SMR) were calculated¹² to compare Minnesota cancer incidence rates for 1988 to 1994 with those in CINA for 1988 to 1992. We also used SMRs to compare current and past incidence data for the tri-county region in north-eastern Minnesota and the five-county metro region.

RESULTS

From 1988 to 1994, the MCSS recorded a total of 1,093 pathologically confirmed cancer diagnoses and 47 benign CNS tumors in children under age 15. Table 1 describes the

relative frequencies of both malignant and benign intracranial and CNS tumors and malignant tumors for the other 12 histologic groups. Leukemias were the most commonly diagnosed cancer in both boys (30.3%) and girls (29.6%), followed by CNS tumors (25.3% for boys and 23.9% for girls). The other 10 histologic groups accounted for the remaining 44.4% of cases in boys and 46.5% in girls.

AGE-SPECIFIC INCIDENCE RATE

Age-specific incidence rates were calculated for the 13 histologic groups described in Table 1. A large number of children were diagnosed with ALL and CNS tumors. As shown in Table

Table 2

Average annual age-specific incidence rates, acute lymphoblastic leukemia for children (0-14) in Minnesota, 1988-94

Age (years)	Males		Females	
	Cases	Rate	Cases	Rate
<1	3	12.8	5	22.2
1	12	51.2	6	26.6
2	23	95.6	18	79.4
3	27	111.8	26	112.3
4	18	73.4	13	55.1
5	17	69.4	13	55.1
6	9	36.4	6	25.4
7	10	40.1	8	33.9
8	6	25.0	1	4.4
9	8	31.5	3	12.4
10	5	20.0	7	29.4
11	3	12.4	3	13.1
12	1	4.3	3	13.5
13	7	30.6	3	13.8
14	5	22.5	4	18.9

Table 3

Average annual age-specific incidence rates, CNS tumors for children (0-14) in Minnesota, 1988-94

Age (years)	Males		Females	
	Cases	Rate	Cases	Rate
<1	5	21.3	8	35.4
1	13	55.4	8	35.5
2	9	37.4	11	48.5
3	11	45.6	8	34.5
4	8	32.6	6	25.4
5	11	44.9	7	29.7
6	16	64.6	6	25.4
7	12	48.1	10	42.4
8	11	45.9	8	35.3
9	12	47.2	7	29.0
10	16	63.8	10	41.9
11	8	33.1	10	43.7
12	13	55.6	6	26.9
13	6	26.2	4	18.3
14	11	45.0	10	51.9

2 (Figures 1, 2), ALL incidence peaked in Minnesota children between the ages of 2 and 5, with incidence rates as high as 95.6 (per million) for 2-year-old boys and 111.8 (per million) for 3-year-old boys. Incidence rates for ALL decreased dramatically for children over 5. In contrast, the incidence of malignant CNS tumors did not follow a distinct pattern (Table 3, Figures 3, 4). Incidence rates for boys ranged between 21.3 per million for infants to 64.6 per million for 6-year-olds. For girls, the highest rate was observed for 14-year-olds (51.9 per million children) and the lowest for 13-year-olds (18.3 per million children).

AGE-ADJUSTED INCIDENCE RATES

Age-adjusted incidence rates were calculated for the 13 histologic groups (see Table 4). The incidence rates for all cancer

Table 4

Comparison of age-adjusted pediatric (<15) cancer incidence rates in Minnesota, 1988-94, versus age-adjusted rates for white children from CINA, 1988-92, and SEER, 1990-94

Site	Incidence Rates*					
	Males			Females		
	MN	CINA†	SEER‡	MN	CINA†	SEER‡
All Sites	167.2	155.5	150	136.2	135.8	132
Leukemias	51.4	49.2	42	41.4	40.7	38
Lymphoid leukemia	46.2	40.4	33	37.3	32.0	29
Lymphoma and other reticuloendothelial neoplasms	24.1	21.2		10.8	11.5	
CNS and miscellaneous intracranial and intraspinal neoplasms	38.4	31.8	36	28.1	28.4	31
Astrocytoma	24.2	15.4		17.5	15.0	
Sympathetic nervous system tumors	10.3	11.0		11.0	8.9	
Retinoblastoma	3.3	3.7		4.0	3.3	
Renal tumors	8.3	7.3	9	7.7	8.8	8
Hepatic tumors	3.9	2.2		1.6	1.4	
Malignant bone tumors	7.7	7.1		7.6	7.2	
Soft tissue sarcomas	11.1	10.3	8	8.5	9.1	8
Germ cell, trophoblastic, and other gonadal neoplasms	2.4	4.8		6.7	6.1	

* Standardized to 1970 population

† Cancer Incidence in North America⁹

‡ The Surveillance, Epidemiology, and End Results Program⁸

Table 5

Observed and expected frequencies of childhood cancer by histologic type in Minnesota, 1988-94*

Site	Males			Females		
	Observed	Expected*	SMR†	Observed	Expected*	SMR†
All Sites	614	531	1.2‡	479	432	1.1‡
Leukemias	193	173	1.1	149	137	1.1
Lymphoid leukemia	154	140	1.1	119	107	1.1
Lymphoma and other reticuloendothelial neoplasms	84	72	1.2	36	37	1.0
CNS and miscellaneous intracranial and intraspinal neoplasms	138	113	1.2	97	96	1.0
Astrocytoma	76	54	1.4‡	53	50	1.1
Sympathetic nervous system tumors	41	43	1.0	41	34	1.2
Retinoblastoma	13	16	0.8	15	13	1.1
Renal tumors	33	28	1.2	29	32	0.9
Hepatic tumors	15	9	1.7	6	5	1.2
Malignant bone tumors	26	23	1.1	25	22	1.1
Soft tissue sarcomas	40	39	1.0	29	32	0.9
Germ cell, teratoma, and other gonadal neoplasms	9	17	0.5‡	23	23	1.0

* expected numbers based upon age- and sex-specific incidence rates from CINA

† Standardized Morbidity Ratios (observed/expected)

‡ statistically significant, $p < .05$

sites for children ages 0 to 14 in Minnesota were 167.2 per million for boys and 136.2 per million for girls. Leukemias accounted for the highest age-adjusted rates—51.4 per million for boys and 41.4 per million for girls. The lowest age-adjusted rate for boys was for germ cell tumors (2.4 per million); the rate for girls was approximately three times that, at 6.7 cases per million. The lowest age-adjusted rate for girls was observed for retinoblastoma, 4.0 cases per million. To put these rates in context, national age-adjusted incidence rates for a similar time period are presented in Table 4. Rates for Minnesota were generally higher than those reported for CINA or SEER.

Comparing Minnesota rates with CINA rates, the SMR for all cancer types was 1.2 for boys and 1.1 for girls (see Table 5). The SMR for boys indicates that Minnesota cancer rates were approximately 20% higher than national average rates. The SMRs for boys for the histologic subgroups ranged from a low of 0.5 for germ cell tumors to 1.7 for hepatic tumors. However, only 4 of the 26 SMRs were significantly different from 1 at the 0.05 level.

HISTORIC ANALYSIS

We compared historic childhood cancer incidence data from the 1970s with current data (1988-94). Childhood cancer incidence was compared

for the metro region and the northeastern region of Minnesota. For the metro analysis, we used data collected from 1969 to 1971; for the northeastern region analysis, we used data from 1969 to 1976 (see Table 6). Cancer incidence for children under age 15 increased for boys and girls in both regions. The SMRs for all cancers for boys were approximately the same in both regions (1.6 metro, 1.5 northeastern, $p < .05$), suggesting that cancer incidence in boys increased by approximately 50% to 60%. Cancer incidence for girls also increased in both regions. The SMR for girls for all types was 1.7 ($p < .05$) for the northeastern region and 1.1 for the metro region.

Leukemia incidence in boys did not appear to increase for the metro region (SMR=1.1), but it nearly doubled for the northeastern region (SMR=1.9, $p < .05$). In girls, we did not find a substantial increase in leukemia in either region (SMRs=1.2, $p > .05$).

Brain tumor incidence for boys in both regions increased dramatically. The SMRs were 2.9 for the northeastern region and 2.5 for the metro region. For girls, brain tumor incidence has also increased; SMRs were 2.6 in the northeastern region and 1.4 in the metropolitan region.

DISCUSSION

This is the first study to examine Minnesota childhood cancer incidence data by one-year age categories. Unlike adult cancers, childhood cancer incidence varies markedly between one-year age categories.¹³ However, subdividing childhood cancer cases into age, sex, and histologic strata often leads to very small numbers. Therefore, age-specific variations in childhood cancer inci-

dence in Minnesota may be due, in part, to unstable rates.

The age- and sex-specific incidence patterns for all the childhood cancers included in this analysis agree with what has been observed nationally.¹⁴ In particular, ALL incidence exhibited the characteristic peak between the ages of 2 and 5. The lack of a distinct pattern for CNS tumors is also consistent with findings from another study.¹⁵ This may be due to the effect of grouping different diseases with dissimilar age-specific patterns into one category.

The age-adjusted incidence rates for Minnesota were slightly higher than those observed by CINA or SEER. Because the time periods, classification schemes, case ascertainment methods, and characteristics of the populations included in the CINA and SEER rates differ slightly from those in this study, it is difficult to interpret this finding without further analysis. In particular, SEER and most CINA registries include non-microscopically confirmed cancers, whereas Minnesota does not.

The observation that Minnesota rates for all cancer types for boys and girls were higher than national rates was confirmed by the elevated SMRs, although no one histologic type accounted for this increase. One finding, however, warrants further observation. The incidence of astrocytoma was statistically significantly elevated for boys. This increase must be interpreted cautiously. The absence of a similar finding for girls suggests that the increase may not be real. Future studies that characterize astrocytoma incidence by tumor stage and grade—data that were not collected for this time period—may provide the information needed to assess this observed increase.

Overall, childhood cancer in Minnesota has been increasing over the last 20 years. Brain tumor incidence increased most dramatically,

whereas leukemia incidence appeared somewhat stable. Studies of larger data sets from SEER and the Greater Delaware Valley Pediatric Tumor Registry also observed a dramatic increase in brain tumors for this time period.^{1,2}

The steady increase in this devastating illness in children, observed in Minnesota as well as the rest of the nation, is certainly worrisome. Research must be done to investigate the genetic conditions and other risk factors that may be related to an increased risk of childhood cancer. **MM**

Andrine Swensen is an epidemiologist with the Minnesota Cancer Surveillance System in the Minnesota Department of Health and a predoctoral fellow in the division of pediatric epidemiology and clinical research at the University of Minnesota. Sally Bushhouse is director of the Minnesota Cancer Surveillance System.

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Table 6

Historic comparison of childhood cancer incidence data for the five-county metro region and the three-county northeastern region of Minnesota

	Males			Females		
	Observed	Expected*	SMR†	Observed	Expected*	SMR†
Five-county metro region, 1988-94 vs. 1969-71						
All Cancers	300	189.0	1.6‡	217	190.3	1.1
Leukemias	87	78.9	1.1	63	54.3	1.2
Brain Tumors	62	24.7	2.5‡	49	34.6	1.4‡
Three-county northeastern region, 1988-94 vs. 1969-76						
All Cancers	30	20.5	1.5‡	22	13.1	1.7‡
Leukemias	13	6.6	1.9‡	6	5.2	1.2
Brain Tumors	7	2.5	2.9‡	5	1.9	2.6

*Expected number based on incidence rates in five-county metro region, 1969-71, or rate for three-county northeastern region, 1969-76

†Standardized morbidity ratio (observed/expected)

‡Statistically significant at the 0.05 level

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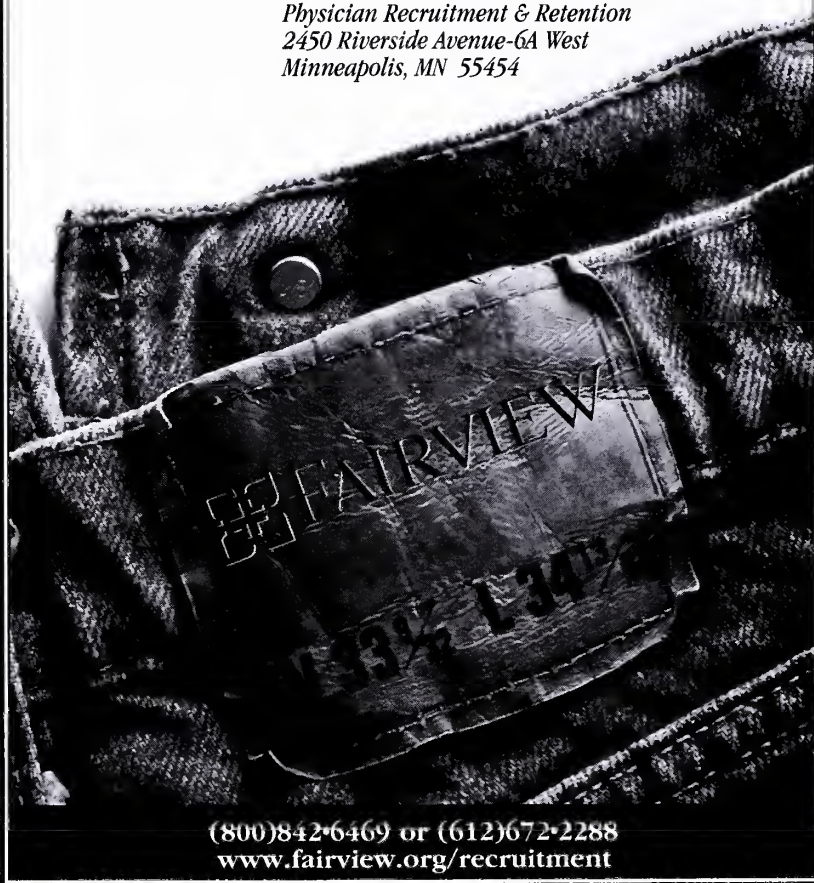
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ANNOUNCEMENTS



Minnesota Medicine Earns Awards

Minnesota Medicine won two awards in this year's Minnesota Magazine and Publications Association competition. The MMA's journal of clinical and health affairs took first place in the single-topic issue category for the December 1997 issue "Bringing Up Baby: The Nature of Nurturing." The magazine also earned a third-place award for the August profile of Dr. Reuben Berman, "A Man for All Hobbies." The competition included technical, trade, and association publications—many with significantly higher circulations.

Legislative Advocacy Summit Slated

The MMA's Legislative Advocacy Summit is scheduled for February 7 and 8, 1999. To register, call Vicki Westling at the MMA at 612/378-1875 or 800/DIAL MMA (342-5662).

MMA Resolutions to AMA I-98 Include Smoking Ban

Minnesota resolutions to the 1998 American Medical Association Interim Meeting include a measure aimed at eliminating smoking in all workplaces, including bars and restaurants.

The resolution calls on the AMA to support legislation "to prohibit smoking in all workplaces, thus protecting employees from the exposure and effects of secondhand smoke." The proposal also asks the AMA to support Occupational Safety and Health Administration (OSHA) standards to provide workplace protection from secondhand smoke.

Other Minnesota resolutions include:

- A resolution calling on the AMA to monitor the impact of Medicare's home health care interim payment system (IPS) on beneficiaries' access to home health care services. The resolution asks that, if the AMA determines that Medicare's home health care IPS threatens Medicare beneficiaries' access to home health services, "the AMA advocate for appropriate home health care payment reform to maintain the viability of quality, cost-efficient home health care agencies."
- A resolution calling for reaffirmation of current AMA policy on parity for mental illness, alcoholism, and substance abuse in medical benefits programs. The proposal also asks the AMA to develop model legislation for state and specialty medical societies to use in promoting state legislation to guarantee parity for coverage of mental illness and chemical dependency.
- A measure asking the AMA to encourage all hospitals and clinics to reduce and prevent workplace violence

and abuse and to develop policies to manage reported occurrences of workplace violence and abuse.

• A proposal calling on the AMA to research the need for a "national initiative devoted to responding to the health care needs of young adults." The resolution also asks that if the research shows a need, the AMA develop a public information campaign to inform the public, including young adults, about health risks common to young adults and the importance of having a primary source of medical care.

The Interim Meeting is taking place December 5-9 in Honolulu.

AMA Group, Led by MMA's Nelson, Issues Report

The AMA committee formed in the wake of the infamous Sunbeam arrangement has released its final report.

The Ad Hoc Committee on Structure, Governance, and Operations—led by Minnesota rheumatologist Audrey M. Nelson, M.D.—is presenting its report at the Interim Meeting. Among its conclusions are that the AMA's "governing entities . . . operate independently rather than as an integrated system, with loosely defined and overlapping roles and responsibilities." The report also concludes that the AMA culture "is one of power and control, where political considerations often take precedence over the profession's needs."

The committee recommends that the AMA adopt an "integrated strategic planning process" and create a five-year plan for improvement. For more coverage of the Interim Meeting, see the January issue of *News & Views*. ■

VIEWPOINT

Paul C. Matson, M.D.

Chair, MMA Board of Trustees



Help Plan and Carry Out MMA Strategies

This is our association; each year we have an opportunity to help set priorities by working through our MMA House of Delegates. Following the Annual Meeting, the MMA Board of Trustees puts together a work plan to carry out our resolutions and assigns projects to various MMA committees. This year our goals cover a wide range of topics, from prompt pay for physicians to smoke-free workplaces for all Minnesotans. Some resolutions call for legislative solutions, some for public education or other methods. It will be a busy year.

One of our first projects is to find out if health plans are making timely payments to physicians. And if not, are the delays confined to certain insurance products such as self-insured or indemnity insurance, or to certain health plans? To find the answers, we adapted a survey developed by the American Medical Association and mailed it to 600 randomly selected clinics. If you received a survey, I urge you to fill it out right away. We must move quickly to analyze the data and—if necessary—introduce legislation during the 1999 session.

Another high priority in our work plan is replacing the provider tax with tobacco settlement money. The MMA has formed the Fair Funding Coalition to bring together other groups that share our goal. Immediately after the elections, we reached out to the new governor and newly elected legislators to seek their support. We'll be ready to press hard for elimination of the provider tax during the 1999 session. Please be ready to join this grassroots effort.

The MMA will also address issues that affect the health and welfare of all Minnesotans. Our proposal that all workplaces, including bars and restaurants, be smoke free has already received a great deal of publicity. We will also strongly support use of tobacco settlement money for smoking cessation and prevention programs.

In addition to seeking laws to protect public health, we will introduce new public awareness campaigns. Our members have asked us to address the dangers of checking in hockey, threats to sight and hearing, pain management at the end of life, workplace violence, and health care for young adults.

Our goals are ambitious. Our

success will depend on our members. I encourage you to become involved in the MMA. There are still openings on the MMA Committee on Communications, the Committee on Administration and Finance, and the Committee on Committees and Bylaws. If you are interested, please call Jane Phillip at 612/378-1875 or 800/342-5662.

You are also invited to join the MMA Legislative Network, consisting of physicians and spouses who contact key legislators and explain the MMA's reasons for supporting or opposing certain bills. The MMA sends Legislative Alerts and talking points to make it easy. This year the MMA is sponsoring a Legislative Advocacy Summit on February 7 and 8 to give you the tools you need to be an effective advocate. If you wish to know more about the Legislative Network, please call Wendy O'Donnell at the number listed above.

The MMA work plan guides us throughout the year, but we also want to hear from our members on an ongoing basis. If there's an issue we should respond to, please let us know. ■

Hanson Earns Distinguished Service Award

Pioneering antitobacco activist **A. Stuart Hanson, M.D.**, of Minneapolis, has won the **Distinguished Service Award**, the highest honor given by the Minnesota Medical Association. Hanson accepted the award at the 145th MMA Annual Meeting in St. Paul October 8. He was honored for his years of leadership and service in the MMA and for his outstanding contributions to organized medicine.

Hanson is in private practice in internal medicine, subspecializing in lung disease, at Park Nicollet Clinic-Health System Minnesota, where he is president and CEO of the Institute for Research and Education. His work in pulmonary medicine and critical care led him to pursue what seemed, in the early 1980s, to be an impossible goal: a smoke-free society by the year 2000.

When the MMA formed the Smoke-Free 2000 Coalition 13 years ago, Hanson was its first president. He has fought tirelessly against Big Tobacco since then, helping pass numerous public health laws. He served once again as the Smoke-Free Coalition's president during this year of triumph for tobacco control advocates—the year Minnesota won its historic tobacco settlement. And he is serving on the panel—the Minnesota Partnership for Action Against Tobacco—that will administer the \$202 million in settlement funds slated for smoking cessation and research.

Hanson was president of the MMA in 1993, making violence prevention the theme of his tenure. Under his leadership, the MMA launched its award-winning Stop the Violence Campaign. He currently chairs the Committee on Workplace Violence of the Minnesota Healthcare Coalition on Violence.

He has served as a member and as chair of the MMA Committee on



Distinguished Service Award winner A. Stuart Hanson, M.D., thanks his wife, Gail, for her support through the years.

Legislation, as a member of the MMA Committee on Public Health, and as chair of the Basic Medical Benefits Task Force. Hanson chairs the Minnesota delegation to the American Medical Association and has consistently led the AMA to take stronger stands on tobacco control issues.

Community Service Award

James A. Mohs, M.D., has won the 1998 **Physician Award for Community Service**. The award honors physicians who have performed outstanding service to their communities in addition to their practice of medicine. Named physician of the year in 1997 by the Minnesota Academy of Family Physicians, Mohs serves as health officer for the city of Melrose. A longtime member of the Melrose school board, he served as chair when a difficult school bond issue came before the board. Due to his leadership, the measure passed—resulting in more classrooms and a new gymnasium. This year Mohs was named one of five outstanding school board members.

Mohs has been a driving force in the Jaycees, holding offices at several levels. He is currently president of the Melrose Community Improvement Association, a member and past president of the Chamber of Commerce, and a Lions Club member.

Minority Service Award

Patricia F. Walker, M.D., earned the MMA Award for Meritorious Service to Minority Populations. Walker, an internal medicine specialist, grew up in Southeast Asia. Today, as medical director of the Center for International Health at HealthPartners Ramsey Clinic in St. Paul, she cares for patients from many different cultures. Fluent in Thai and able to speak Lao and Cambodian, Walker is often able to communicate with her patients in their native languages.

As a student at Mayo Medical School, Walker traveled to the Thai-Cambodian border to work with the American Refugee Committee. Today she serves on many task forces and committees, including the Presidential Advisory Committee on Cultural Diversity and Sensitivity at Ramsey Clinic, the State of Minnesota Immigrant Health Task Force, the Refugee Metro Health Task Force, and the Minnesota Refugee Consortium.

Walker also serves as a medical advisor to AID to Southeast Asia, a nongovernmental organization supplying medical equipment to Vietnam and Cambodia. She has personally sponsored several refugees and helped get hundreds out of camps or settled in the United States.

President's Award

The MMA President's Award was presented to **Thomas G. Birkey, M.D.**; **Lyle Munneke, M.D.**; **Thomas L. Peyla, M.D.**; and **Joseph Rigatuso, M.D.** The President's Award recognizes outstanding contributions to the medical profession through service to the MMA. Recipients have volunteered their time and energy to serve on many MMA committees and task forces. ■

MMA Celebrates Child Health Month

Each October the MMA joins other health care organizations in recognizing Child Health Month, which is sponsored throughout the nation by the American Academy of Pediatrics (AAP). This year the MMA and the Minnesota Chapter of the AAP collaborated on a poster designed to stop adolescent drinking before it begins. The message to kids is: "You are the boss of your mind, your body, your future! You already know what alcohol can do to you. What are you going to do about it?" The poster was mailed to family practitioners and pediatricians throughout the state. If you wish to receive a poster, call Shirleyanna Webb at the MMA, 612/378-1875, or the AAP, Minnesota Chapter office at 612/757-7805.

As a member of the Child Health Month Coalition, the MMA also participated in Child Health Month Family Fun Night at the Mall of America on October 27. The goal was to discourage children from using alcohol, tobacco, or drugs.

Mall shoppers stopped to watch the National Theatre for Children present the educational play "Too Smart to Smoke," and hear the rap group No Crime for Crime perform. Many families also stopped by the booth sponsored by the MMA and

the Smoke-Free 2000 Coalition and picked up the poster created especially for Child Health Month by the Minnesota Chapter of AAP and the MMA. Other handouts included a poster for children on inhalant dangers and several antismoking posters.

Medical students Cathy Kral and Amanda Brown of Mayo Medical School, and Jill Salo, Nicole Sandhu, and Andrea Hustad of the University of Minnesota Medical School gave children a "true or false" quiz on tobacco facts and handed out prizes. ■



Cathy Kral and Amanda Brown of Mayo Medical School and Jill Salo of the University of Minnesota Medical School give children a "true or false" tobacco quiz at the MMA/Smoke-Free Coalition booth at Children's Health Month Family Fun Night at the Mall of America October 27. Nicole Sandhu and Andrea Hustad of the U of M Medical School also volunteered at the event.

AMA Calls for Removal of Nicotine from Cigarettes

American Medical Association leaders chose St. Paul—the site of the 1998 National Conference on Tobacco and Health—to announce October 28 the AMA's recommendation that the U.S. government force tobacco companies to reduce nicotine to nonaddictive levels.

The recommendation was based on a recent report by the AMA's Council on Scientific Affairs, which was created in response to a Minneso-

ta resolution to the 1996 AMA Interim Meeting. That Minnesota resolution urged the AMA to push for removal of nicotine from cigarettes.

The council's report concluded that gradually eliminating nicotine from cigarettes is possible, and that such a strategy would prevent adolescent tobacco addiction and help current smokers who want to stop.

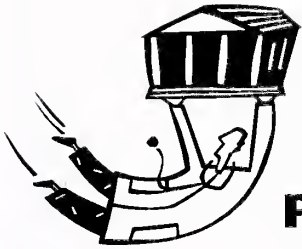
"People may not stop using tobacco for ceremonial purposes, but

[without the nicotine] they won't get addicted," said longtime antitobacco activist A. Stuart Hanson, M.D., who chairs the Minnesota delegation to the AMA. "Get rid of nicotine, and when people want to quit they can quit."

The same day the AMA held its news conference, the British Medical Association (BMA), which just published the report in its journal *Tobacco Control*, called on the British government to take similar actions. ■

NEWS DIGEST

*People and places
making medical news*



People & Places

Nationally renowned antitobacco advocate and past MMA president **A. Stuart Hanson, M.D.**, received the 1998 Charles Bolles Bolles-Rogers Award. The award is given annually to a physician that the Hennepin Medical Society deems outstanding based on professional contributions in medical research, achievement, or leadership. Hanson, an internist specializing in lung disease, earned the award for his tireless public health efforts to protect Minnesotans from the hazards of cigarette smoking. Hanson has also been named to the **Minnesota Partnership for Action Against Tobacco**, the nonprofit panel that will administer the \$202 million in settlement funds earmarked for smoking cessation programs and tobacco control research.

Linda Brandt, R.N., B.S.N., founder and director of the **Rural AIDS Action Network** in Minneapolis, has been selected to serve on the **National Rural Health Association's National Task Force on Rural HIV/AIDS**. Chosen from 150 nominees, the 15-member task force is composed of rural health care providers, public health workers, hospice givers, people with HIV and AIDS, and community and religious leaders. Its charge is to set a national agenda addressing treatment and prevention of HIV/AIDS in rural America.

William F. Keane, M.D., profes-

sor and chair of the **Department of Medicine at Hennepin County Medical Center**, was elected vice president of the **National Kidney Foundation**. He will focus on the widespread problem of cardiovascular disease in kidney patients by working to develop better approaches to preventing and managing the problem. He also plans to work on increasing public awareness of and research on protein in the urine and its implications for cardiac and kidney diseases. In addition to his new position, Keane is vice chairman of the **Department of Medicine at the University of Minnesota Medical School** and past president of the **Minneapolis Medical Research Foundation**.

The **Hennepin Medical Society** has announced its new officers: chair, **Edward A.L. Spenny, M.D.**, an internist at **Columbia Park Medical Group**; president, **David L. Estrin, M.D.**, a pediatrician at **South Lake Clinic** in **Minnetonka**; president-elect, **Virginia R. Lupo, M.D.**, an ob/gyn at **Hennepin County Medical Center**; secretary, **Richard M. Gebhart, M.D.**, a family physician at **Camden Physicians** in **Maple Grove**; and treasurer, **Michael B. Ainslie, M.D.**, a pediatrician at **Park Nicollet Clinic/Health-System Minnesota**. Their terms will expire in October 1999.

James D. Lakin, Ph.D., M.D., M.B.A., received the 1998 **Edward B. Stevens Article of the Year Award**

from the **Medical Group Management Association** for his article "Psychology and Employee Commitment: Promoting Physician Loyalty" in the March/April 1998 issue of the *MGM Journal*. Lakin is director of **Fairview Clinics Allergy and Asthma Services**.

The **University of Minnesota Department of Obstetrics and Gynecology** has established the **Shirley A. Sparboe Endowed Chair in Women's Cancer Research** through more than \$1.6 million in contributions from women's health advocates. One of just a few endowed positions in the nation dedicated to gynecological cancer research, the chair is made possible through the efforts of the **Women's Health Fund**, an affiliate of the **Minnesota Medical Foundation (MMF)**. Annual income from the endowment is expected to help attract an outstanding cancer scientist to the university and provide funding for research in the diagnosis and treatment of ovarian, cervical, endometrial, vulvar, and uterine cancers. The Sparboe chair holder will collaborate with other cancer specialists in the university's **Cancer Center**.

A recent gift of \$500,000 from **Robert Sparboe** of **Litchfield, Minnesota**, ensured establishment of the chair. Sparboe, a member of the MMF board, made the gift in memory of his wife, **Shirley**, who died from ovarian cancer in 1989. ➡



Socioeconomics

HealthPartners to Drop Clinics from Medicare HMO

HealthPartners will drop 13 clinics in a Medicare HMO effective January 1, affecting about 1,400 senior citizens. Clinics dropped by HealthPartners include Camden Physicians Ltd. of Minneapolis, Mork Clinic, PA, of Anoka, North Suburban Family Physicians, Regina Medical Center of Hastings, South Suburban Clinic of Farmington, and Stillwater Medical Group, PA. Patients in HealthPartners' Partners for Seniors plan will be able to use the 24 clinics where the doctors are HealthPartners employees.

Several other health plans have scaled back their Medicare HMO plans as well because of low government reimbursement levels. Allina Health System's Medica plan dropped four of eight counties, affecting 10,000 seniors. The federal government decided to limit increases in Medicare reimbursement to 2 percent for next year, even though medical costs for many plans have risen much more than that.

HMO Premiums Climb

The state's health maintenance organizations increased their monthly premiums by an average of 4 percent, or about \$123.52 per member in 1997, according to Allan Baumgarten's *Minnesota Managed Care Review*, an annual analysis of financial information submitted by HMOs. Medica, the state's largest HMO, had the largest increase at 8.3 percent, while it posted losses of

\$29.3 million. HMO enrollment increased by 8,400 people in 1997 to total more than 1.4 million, slightly more than one-quarter of the state's population.

Health Care Buyers Coalition Chooses New Administrator

The Buyers Health Care Action Group (BHCAG) selected a consortium of vendors to administer Choice Plus, a health plan offered to employees of the nearly 30 companies that make up BHCAG. Beginning in 2000, the new administrators will take over from HealthPartners, which has serviced the BHCAG account since 1993. Choice Plus members will still be able to go to HealthPartners clinics.

The consortium includes the Bloomington office of Watson Wyatt Worldwide, the Des Moines-based Kirke Van Orsdel, and Reden & Anders, a subsidiary of Minnetonka-based United HealthCare Corp. The administrators will process claims, coordinate the network of physicians, and provide customer service support to Choice Plus's approximately 120,000 members.

"Initially, our members won't be impacted very much; they'll get the same services they've always been getting," said Steve Wetzell, BHCAG executive director, in a Minneapolis *Star Tribune* article. "But in the long run, there should be enhancements, including an expanded Internet site."

HealthPartners said the loss of the account would not affect the company financially.

Ramsey County Will Cut Aid to Regions Physicians

The Ramsey County Board voted in October to eliminate half of its an-

nual contribution of \$824,434 to physicians at Ramsey Clinic, the physician group associated with Regions Hospital in St. Paul. County Manager Terry Schutten has recommended that the other half of the annual payment be eliminated in 2000.

Ramsey County owns the Regions Hospital buildings; the hospital, part of the HealthPartners network, has a long-term lease with free rent. The lease requires HealthPartners to provide care to uninsured patients. Regions officials say that county subsidies cover only a small portion of their losses on care for the uninsured.

In a prepared statement submitted to the board, Ramsey Clinic representative Terry Crowson, M.D., objected to the county's move to phase out assistance: "Regions Hospital and Ramsey Clinic are dedicated to serving the indigent and are willing and able to serve a fair share of the poor and vulnerable. However, we can't continue at the current levels."

The county plans to continue its \$2.5 million annual subsidy for the care Regions provides to the uninsured and underinsured. According to figures reported by the St. Paul *Pioneer Press*, the total cost of such care in 1997 was \$15.2 million, about \$7.5 million of which was for Ramsey County residents.

State Seeks Disclosure of Tobacco Toxins

Minnesota Department of Health officials sent notices in October to tobacco companies directing them to report whether their products contain five toxic substances. A state law enacted in May 1997 requires tobacco companies to disclose by brand whether their products contain ammonia or ammonia compounds, arsenic, cadmium, formal-

dehyde, or lead. The law authorized the health department to create a disclosure form to send to the tobacco companies. Cigarettes, cigars, and other tobacco products are covered.

The department was spurred to act after receiving a scathing letter from state Sen. John Marty, DFL-Roseville, who criticized officials for failing to collect the information nearly one and a half years after the law was signed.

With Major Buy, Medtronic Enters Back Surgery Market

In its largest acquisition ever, Fridley-based Medtronic Inc. will spend \$3.6 billion in stock for the Sofamor Danek Group Inc., based in Memphis, Tennessee. The acquisition allows the heart device manufacturer to enter the rapidly expanding mar-

ket for back surgery products, sales of which have been growing 25 percent annually, compared with 15 percent growth in sales of pacemakers and defibrillators.

An estimated 5 million people suffer from debilitating back pain, and more than 275,000 surgical procedures are done each year, a number that has been increasing as surgeons are using less invasive techniques. Sofamor Danek holds an estimated 40 percent to 50 percent of the \$850 million worldwide market for spinal surgery devices.

Sofamor Danek and Medtronic's existing neurological business could account for 40 percent of Medtronic's annual revenue within the next 10 years, the St. Paul *Pioneer Press* reported.

Research & Innovations



Study Suggests Ways to Reduce Infant Mortality

Improvements in community services to pregnant women and mothers could lower the infant mortality rate, according to a report by the Minneapolis and St. Paul-Ramsey health departments. The report, based on a study of 116 infants who died in Hennepin and Ramsey counties from May 1996 to April 1997, found that 22 of the infants received faulty perinatal care; some teen mothers received poor medical follow-up; some non-English-speaking mothers did not have interpreters during birth and labor; 17 women were subject

to violent acts during their pregnancies; and 30 women used harmful substances during their pregnancies.

Although Minnesota is ranked as the healthiest state in the nation, in Hennepin and Ramsey counties, infant mortality rates are still high—7.2 per 1,000 live births in Hennepin County and 8.6 in Ramsey County, compared with 6.9 in Minnesota as a whole.

The report urges health care professionals to provide interpreters during labor and delivery; to provide home visits for teen mothers; to step up efforts to help pregnant women quit using tobacco, drugs, and alcohol; and to screen pregnant women for domestic violence.

Herbal Extract Appears to Be an Effective Prostate Drug

The herbal extract saw palmetto may be as effective as the commonly pre-

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scribed drug Proscar (finasteride) in treating an enlarged prostate, according to a study led by Timothy J. Wilt, M.D., an internist at the Minneapolis Veterans Medical Center.

The study, reported in the November 11 *Journal of the American Medical Association*, analyzed 18 studies in which saw palmetto, an extract from a tropical plant of that name, is used to treat benign prostatic hyperplasia. Wilt found that saw palmetto is as effective as Proscar in treating BPH symptoms and less likely to result in erectile dysfunction and other side effects.

The research showed that saw palmetto improved urinary tract symptoms by 28 percent and reduced nighttime trips to the bathroom by 25 percent—similar to improvements with Proscar. The herbal remedy appeared to offer the

advantage of fewer side effects. About 1 percent of men taking saw palmetto reported erectile dysfunction, compared with 4.9 percent of those taking Proscar. Fewer men taking saw palmetto reported gastrointestinal problems than those taking Proscar.

In addition, the herbal remedy is cheaper; a 90-day supply of saw palmetto costs from \$10 to \$50, compared with \$120 to \$200 for a 90-day supply of Proscar.

Proscar is thought to shrink the prostate by suppressing certain hormones such as testosterone. Researchers are uncertain how saw palmetto works.

Wilt and others urged men with BPH to see their physician before taking saw palmetto, since its long-term effects are not known, and BHP symptoms are nearly identical to the signs of prostate cancer.

Following the lipid control guidelines recommended by the National Institutes of Health, Henry placed 20 patients with lower lipid levels on a diet and exercise program, while 24 patients with higher levels were treated with the cholesterol-lowering drug gemfibrozil; some were treated with atorvastatin. After six months, patients with the highest levels experienced as much as a 60 percent drop in their lipid levels and a 30 percent drop in their cholesterol levels. The results of the study appeared in the September 26 *Lancet*.

'U' Gets Grant for Interactive TV Home Health Care Project

The University of Minnesota has received \$625,000 from the U.S. Department of Commerce to begin a home health care endeavor called the TeleHome Care Project, which will connect patients with their nurse or physician by interactive television. Investigators hope it will prove a cost-effective way to accommodate the growing number of people who receive their health care at home. The grant, combined with matching funds from clinical and industry partners and the university, brings the total appropriation to more than \$1.3 million.

Patients will receive home health care supplemented with a video telephone, video connections through their televisions, and home monitoring devices to check physiological signs such as blood pressure, blood oxygen level, or lung function. The first of 60 home video links will be established in January in the Twin Cities, Wadena, Crosby, and Staples, and the system will be fully operational by October 1999. Stuart Speedie, Ph.D., and Stan Finkelstein, Ph.D., both professors of laboratory medicine at the university, are directing the study and will issue a report in December 2000. ■

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Researchers Advocate Diet and Exercise to Combat Side Effects of AIDS Drugs

Researchers at Regions Hospital in St. Paul have developed a "common-sense" approach for reducing the dangerous levels of cholesterol and triglycerides found in some HIV patients treated with protease inhibitors. The treatment involves a diet and exercise program along with cholesterol-lowering drugs. Although it is not a long-term solution, it will protect patients while researchers look for better ways to control blood fats, according to Keith Henry, M.D., director of the HIV program at Regions Hospital and an associate professor at the University of Minnesota.

The discovery of high blood fats as a possible side effect of protease inhibitors has emerged as one of the major problems with what has become the most successful treatment for HIV. It is also a main reason patients are reluctant to take the drugs.

A Community Approach to Prenatal Care

Community and social programs for pregnant women and their families are gaining favor in Canada. Let's follow our neighbor's lead.

Barbara Yawn, M.D., M.Sc.

The pregnant woman was once considered a precious unit deserving of community attention and support. Today's pregnant woman hardly receives any notice. She continues to work, exercise, and play, with little or no modification in her schedule. Special considerations such as extra periods of rest or nutrition breaks require significant medical and social intervention. Unlike extended families of days past, few families today live close enough together to provide much prenatal support to the women struggling with pregnancy, work, and the demands of other young children.

Of course, accepting pregnancy as a normal, healthy condition is good, but we may have gone too far; pregnancy still deserves special consideration. The pregnant family needs community support that encourages responsible, healthy behaviors that nurture the pregnancy. For example, the community needs to help women stop using tobacco and alcohol, obtain prenatal care, and nourish the growing infant.

Canada has begun experimenting with programs that go beyond medical intervention to involve the larger community in programs aimed at all pregnant families—not just socially or economically disadvantaged families.

Canada's community-based prenatal care programs bring together employers, teachers, and spiritual leaders, as well as the usual public health, medical, and social service communities. The programs reassess what can be done to improve pregnancy outcomes and the communities' commitment to families. For example, pregnant women buying cigarettes are offered friendly support and information on smoking cessation programs designed specifically for the pregnant woman or her family. Local bars provide nonalcoholic drinks free to pregnant customers. Many Canadian employers offer rest areas for pregnant women, and almost all attempt to have on-site daycare that facilitates breast-feeding, rather than laws prohibiting public breast-feeding.

Randomized control trials show that such social initiatives make a difference. In fact, trials of the programs in Canada have been associated with a decline in

preterm birth rates, as they have in France.

Unfortunately, that kind of support is largely absent in the United States. During a study of fetal and infant deaths in the region, the Southeast Minnesota Fetal and Infant Mortality Reduction Project Registry found numerous cases of mothers and fathers who were not given paid, or even unpaid, work leave for major medical or social problems, such as the prenatal discovery of a major birth defect or the death of one twin. Sometimes medical requests for reduced work schedules in the case of multiple pregnancies were met with dismissal notices.

Studies suggest that in many regions of the United States, we do well in birthing full-term healthy babies. In other, high-risk areas, our medical intervention is not enough. Even in the "best" areas, we fall short of the results reported in other countries. We can rationalize this by citing our diversity, size, and more accurate data collection; however, that doesn't lead to improvements.

We know our own medical models have limitations. We should be willing to go beyond our office or hospital doors to explore what more can be done. As physicians, we have become involved in such social issues as reducing family and media violence and promoting seat belt use and gun safety. Maybe community-based prenatal care should be next on our list.

MM

Barbara Yawn is director of clinical research at the Olmsted Medical Center in Rochester, Minnesota, and editor of Minnesota Medicine's Public Health Reports.

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Billy the Kid Was

The Story of Dr. Henry Hoyt

*Legends about Billy the Kid are alive and well.
Meet the Minnesota doctor who was
acquainted with the notorious outlaw.*

So much has been written about Billy the Kid that the casual reader faces an impossible task of separating fact from fiction. William Bonney probably would have been quickly forgotten if not for "The Authentic Life of Billy the Kid," by Pat Garrett, published the year after Billy's death in 1881.

While the book was credited to Garrett, it was actually ghostwritten by newspaperman Ash Upson. Historians have documented numerous errors and fantasies in the book. Unfortunately, these errors were perpetuated and compounded in the retelling of those tales through the years. Several reliable firsthand accounts exist, however, such as the one in "A Frontier Doctor" by Henry Hoyt, M.D. (Houghton Mifflin Co., 1929).

The Good Doctor

Hoyt was a native Minnesotan, educated at Minnesota State University. He worked as a rodman on a railroad survey crew and also helped survey the U.S.-Canada boundary. In 1874 he began the study of medicine in St. Paul. He interned at the Church Hospital in St. Paul in 1875, and in 1876 he attended Rush Medical School in Chicago. During the summer of 1877, he practiced medicine in Deadwood, South Dakota. Later, Hoyt himself achieved fame as major and chief surgeon of the U.S. Volunteers in the Philippines, where he participated in 25 battles. He was wounded and

received the Silver Star for gallantry.

In the fall of 1877, Hoyt headed west for the Texas panhandle, where he supplemented his medical income by working as a cowboy. There Hoyt became acquainted with Billy the Kid. Hoyt later moved on to New Mexico, riding a horse that the Kid had given him. In September 1881 Hoyt returned east, two months after Billy the Kid's death. Hoyt's accounts of the Kid are generally regarded as some of the most dependable.

'Bipolar' Billy

As historian K.L. Steckmesser observed, "There are two Billy the Kids in legend. The first is a tough little thug, a coward, a thief, and a cold-blooded murderer. The second is a romantic and sentimental hero, the brave and likable leader of an outnumbered band fighting for justice." This dual image of the Kid has provided endless opportunities for historians and writers to expound their opinions and theories.

A literature search of materials from 1881 to 1952 found 437 items pertaining to Billy the Kid. Today, the number of Kid references in a typical library search is almost a thousand. An item in the March 1998 issue of the tabloid *The Weekly World News* discusses a time machine that reportedly transported Jesse James and Billy the Kid to the present day. It seems the legend will never die.

My Friend

The Doctor Meets the Kid

In the fall of 1878, at age 24, Hoyt first met the Kid in Tascosa, Texas, when Billy was 18 years old. Hoyt describes him: "Billy Bonney was then eighteen years old a handsome youth with smooth face, wavy brown hair, an athletic and symmetrical figure, and clear blue eyes that could look one through and through. Unless angry he always seemed to have a pleasant expression with a ready smile. His head was well shaped, his features regular, his nose aquiline, his most noticeable characteristic a slight protrusion of his two upper front teeth."

Hoyt recalls the melee surrounding Billy and his pals in Tascosa, when they drove a herd of horses to the panhandle to sell: "For some time Bonney's party mingles freely with all, sold and traded horses with anyone so inclined, varying their business dealings with drinking, gambling, horse racing, and target shooting." But Hoyt also dispels some myths. "Billy was an expert at most Western sports and dissipations with the exception of drinking. Much has been published of his exploits during drinking bouts, but it is my opinion they are mostly fiction. I never knew of his taking a drink of liquor all the time he was in the Panhandle."

While the Kid was not a drinker, his cohorts imbibed frequently—often resulting in brawls. Hoyt remembers one incident:

"John Middleton [one of the Kid's men] was drinking heavily one day at Howard and McMaster's Store and began to get ugly, evidently looking for

trouble. Others present were in a similar condition and it began to look squally. At that time and place and under those conditions, war was fashionable. Peace seemed to trouble men's minds. In this particular instance old John seemed to be taking the initiative, profanely and vociferously declaring to the world just what a very bad man he was.

"He had his hand on his gun and during his boasts glared fiercely around hoping some one would give him the slightest excuse to begin hostilities. Just at this juncture in walked Billy the Kid.

"In a mild voice that contained, however, a curious note of challenge as well as command, he said, 'John Middleton, you damned idiot, light out for camp and stay there till I come.'

"Wheeling toward him, Middleton, his eyes flashing, replied, 'Billy, you'd never talk that way to me if we were alone. You think you're showing off.'

"If that's the way you think just come with me out behind the store and we will be alone,' was Billy's quick reply, as he backed toward the door, hand on his gun.

"Middleton's face turned an ashen color, his lower lip dropped, and with a sickly grin he stuttered out, 'Aw Billy, come off, can't you take a joke?'

"'You bet I can,' said Billy, 'but this is no joke. You heard me.



By J.D. Haines, M.D.

⇒

Git for camp and git quick.' And old John shuffled out the door like a whipped dog."

Partying with a Physician

Billy would go to a saloon with anyone; he loved parties, music, and dancing. He was always a ladies' man. Since he was fluent in Spanish, he was a favorite among Mexican women. The Romero's of Tascosa hosted a weekly party, but guns were strictly forbidden. Hoyt describes a party that he and the Kid attended:

"On a beautiful moonlight night a Romero baile was in full swing. Bonney and I stepped out to enjoy it and incidentally strolled across the plaza, about one hundred yards in width, to Rinehart's store opposite. Returning I challenged the Kid to a foot race to the dance hall. I found he could run much faster than the 'Sailor,' [a previous competitor] but I led him all the way. As we neared the door I slacked up, while Billy kept on at full speed through the door.

"Mexican adobe houses, for some reason, have a threshold about a foot high, and as the Kid flew through, the heel of one of his cowboy boots caught on it landing him at full length on the floor in the middle of the ballroom.

"Quicker than a flash his prostrate body was surrounded by his four pals, back to back, with Colt's forty-five in each hand, cocked and ready for business. The Kid's unconventional entrance was to them an indication that something was wrong, and their lightning exhibition of preparedness showed wonderful efficiency of its kind. How and where the guns were concealed was never quite understood, but their owners all registered chagrin when they learned that they were barred at all future Romero bailes."

After Hoyt and the Kid became better friends, Hoyt sometimes urged Billy to mend his roguish ways and move south of the border for a fresh start. Hoyt admired the good qualities in Billy's character and felt that the Kid had the capacity for success. The two friends even exchanged gifts; Hoyt recalls a watch he gave to Billy:

"Another diversion was draw poker which all indulged in. Some time previously I had won a very pretty ladies' gold watch which Billy admired and wished to purchase.

"In a previous talk he had told me about his romance with a little New Mexican beauty, none other than Senorita Lolita whom I had met at Fort Sumner on the Pecos River, and suspecting he wanted the watch for her I made him a present of it, which pleased him very much.

"Attached to this watch was a handsome long chain of braided hair. In the picture of Billy the Kid that is shown in this volume and which was taken at Fort Sumner when he returned from the Panhandle early in 1879—or possibly late 1878—and no doubt the only one of the outlaw in existence, the two strands of this chain can plainly be seen crossing his shirt-front.

"After learning his history directly from himself and recognizing his many superior natural qualifications, I often urged him, while he was free and the going good, to leave the country, settle in Mexico or South America, and begin all over again. He spoke Spanish like a native and although only a beardless boy was nevertheless a natural leader of men. With his poise, iron nerve, and all-round efficiency properly applied, he could have made a success anywhere."

A Parting Gift

When Hoyt made plans to leave Tascosa in October 1878, the Kid presented him with a fine horse called Dandy Dick. Billy gave Hoyt a bill of sale, which Hoyt preserved and reprinted in an autobiography.

Hoyt later witnessed one of the most memorable meetings of outlaws in frontier history. While having Sunday dinner at a hotel at the hot springs near Las Vegas, New Mexico, Hoyt was amazed to find himself seated at a table with his old friend Billy the Kid. The Kid introduced Hoyt to a "Mr. Howard" from Tennessee. The Kid later informed him that Mr. Howard was actually Jesse James. James had asked the Kid to join forces and hit the outlaw trail as partners, but Billy declined, reluctant to leave New Mexico.

Hoyt's final meeting with the Kid occurred at a train station while Billy was being transported under arrest from Santa Fe to Mesilla to stand trial for the killing of Sheriff William Brady. Hoyt recognized the Kid through a train window and boarded the train for a brief visit. He asked Billy if there was anything he could do for his comfort.

The Kid was in high spirits as usual, and answered, "Sure, Doc, just grab and hand me Bob's gun for a moment," referring to U.S. Deputy Marshal Bob Ollinger.

Ollinger replied, "My boy, you had better tell your friend goodbye. Your days are short."

Billy retorted, "Oh I don't know, there's many a slip 'twixt the cup and the lip.'"

Within a month, Ollinger would be killed with that very gun during the Kid's escape from the Lincoln, Nebraska, jail on April 28, 1881. Deputy Sheriff J.W. Bell was also killed in the escape.

When the Kid and Hoyt said farewell for the last time on the train, Hoyt did not know Billy's days were numbered. On July 14, 1881, the Kid was gunned down at Fort Sumner by Sheriff Pat Garrett. Garrett's book appeared the next year, and the legend was born.

RIP

On a desolate stretch of New Mexican prairie near old Fort Sumner, a small cemetery contains the remains of the most infamous outlaw of the American West. A low adobe wall surrounds the graveyard that purportedly bears the bones of Billy the Kid.

Although jails failed to hold the Kid in life, his remains are incarcerated for eternity. Ironically, the Kid's grave is enclosed by a 10- by 10- by 6-foot tall steel cage that prevents souvenir hunters from stealing or chipping away bits of Billy's tombstone. The stone has been stolen twice, the first time in 1950, although it was recovered in 1976 in Granbury, Texas. The second theft occurred on February 8, 1981. The stone was found just four days later in Huntington Beach, California.

Two markers are at the gravesite. The larger one reads "PALS," referring to two of Billy's comrades—Tom O'Folliard and Charlie Bowdre—buried next to him. The smaller stone reads, "Truth and History, 21 men, Billy the Kid, Born Nov. 23, 1860, Killed July 14, 1881, The Boy Bandit King, He Died as He Had Lived."

The smaller stone is secured to the ground with ironwork. An admirer, perhaps female, since Billy was much loved by the ladies, has placed a silk rose in the ironwork. A wreath of fall foliage rests against the larger stone. The five-foot cage door is double-chained and triple-locked, so remembrances are not encouraged. Still, cigarette butts and coins litter the concrete overlaying the three graves. Some claim that Billy's body is not in the grave but is actually buried in a nearby field.

Adjacent to the cemetery is a museum that claims existence in the 1930s. Across the street a billboard advertises a competing museum in downtown Fort Sumner and proclaims that the museum has been featured on ABC's "Prime Time Live."

The Legend Lives On

One thing hasn't changed since 1881: public fascination with the legend of Billy the Kid. The legend has completely overwhelmed the facts. For example, Billy did not kill 21 men, as many accounts hold. Over the years, this myth became much bigger than anything

Billy accomplished in his short and violent life. But thanks to observers like Hoyt, some facts can be ascertained from the many fantasies. MM

J.D. Haines, M.D., is a board-certified family practitioner at Employee's Healthcare Center of Stillwater, Oklahoma. He has written more than 60 articles about medicine and history, and two books, including "Vision Quest," a young adult novel, and "Wiley Haines, Frontier U.S. Deputy Marshal." The latter, a biography about J.D. Haines's great-grandfather, will be published in 1999 by the Oklahoma Heritage Association.

Photo courtesy of Western History Collections, University of Oklahoma Libraries.

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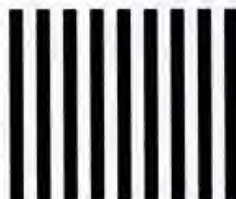


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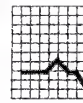
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FAMILY PRACTICE - Franciscan Skemp Healthcare-Mayo Health System, based in La Crosse, WI, has over 170 physicians/associate providers at 12 clinics and 3 hospitals in WI, MN, IA.

Waukon, IA: BC/BE family physician with interest in the full range of family medicine, including OB, to join 3 BC family physicians and 2 certified PAs in brand new clinic facility. The Waukon Clinic adjacent to 40-bed community hospital. Waukon, pop. 4,000, located in beautiful northeast Iowa, 17 miles from Upper Mississippi River and 50 miles from La Crosse.

Prairie du Chien, WI: Developing new practice and building new clinic facility located on Mississippi River, 60 miles south of La Crosse. Two BC/BE primary care physicians and associate provider needed to staff our newest medical facility in community of 6,000 with service area of 22,000. Hospital has 49 beds. OB is preferred, not required.

Sparta, WI: BC/BE family physician needed due to upcoming retirement. Full range family medicine practice, includes OB. Clinic has 10 primary care doctors and 7 associate providers, including CNM's. Clinic is attached to the hospital. Sparta is a community of 8000; has a service area of 25,000 and is 25 miles from La Crosse.

Tomah, WI: BC/BE family physician to join 7 family physicians, 5 associate providers and 3 other specialists at new clinic facility, located on lake adjacent to recently remodeled 45-bed hospital. Tomah has a population of 8000 with a service area of 25,000 and is 45 miles from La Crosse.

Contact: Tim Skinner at skinner.timothy@mayo.edu or Bonnie Guenther at guenther.bonnie@mayo.edu. Phone: 800-269-1986 or fax CV to 608-791-9898. Franciscan Skemp Healthcare-Mayo Health System, 700 West Avenue South, La Crosse, WI 54601.

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Pop Quiz #2

#1 What Is The DOL Looking For In Your Qualified Plan?

- A. 3 years valuations and 5500 forms
- B. Plan & Trust with IRS determination letter
- C. Fidelity bond
- D. Plan's written investment policy
- E. Investment committee minutes
- F. List of all places where assets are on deposit by name, address, account numbers
- G. Plan's correspondence file

Question #1

- ☐ A only
- ☐ A&B
- ☐ E only
- ☐ All of the above

#2 What Are The Requirements of ERISA?

- A. A plan must have a written Investment Policy that governs:
 - Asset Allocation Decisions
 - Investment Strategies
 - Specific Investment Objectives
- B. Risk of each investment must be evaluated relative to its return
- C. Plan Assets must be diversified
- D. Investment manager selection must be made according to prudent expert standards
- E. Investment must be monitored ongoing
- F. Reporting and evaluation must be available to plan participants

Question #2

- ☐ C only
- ☐ F only
- ☐ C & D
- ☐ All of the above

#3 What Happens If You Fail to Discharge Your Duties?

- A. Personal Liability for losses, including "opportunity costs"
[ERISA Sec. 409(a)]
- B. Possible 20% Civil Penalty
[ERISA Sec. 502(1)]
- C. Loss of Tax Exempt status

Question #3

- ☐ A only
- ☐ B only
- ☐ C only
- ☐ All of the above

**For answers to these questions contact
Stephen Harrison at LAWCO Private Client Group
1-888-925-2926**



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In Memoriam

David B. Auran, M.D.
University of Minnesota, 1961
Born: 1932, Died: May 20, 1998



Elizabeth C. Bagley, M.D.
Unknown, 1927
Born: 1904, Died: July 6, 1998



Charles J. Balogh, M.D.
University of Kansas, 1946
Born: 1921, Died: April 20, 1998



Richard S. Bryan, M.D.
University of Oklahoma, 1950
Born: 1921, Died: June 5, 1998



George E. Cardle, M.D.
Unknown, 1933
Born: 1904, Died: July 20, 1998



Charles F. Cauble, M.D.
University of Arkansas, 1949
Born: 1925, Died: July 25, 1998



Robert J. Cesnik, M.D.
Medical College of Wisconsin, 1949
Born: 1926, Died: Nov. 29, 1997



Donald M. DeCourcy Jr., M.D.
University of Minnesota, 1967
Born: 1942, Died: May 12, 1998



William Derechin, M.D.
University of Manitoba, 1952
Born: 1927, Died: Oct. 19, 1997



Richard A. Dubow, M.D.
University of Minnesota, 1979
Born: 1953, Died: June 8, 1998



Eleanor E. Duerr, M.D.
University of Minnesota, 1943
Born: 1912, Died: Aug. 29, 1997



George M.A. Fortier III, M.D.
Medical College of Wisconsin, 1963
Born: 1936, Died: June 1, 1998



William C. Gentry Jr., M.D.
Boston University, 1963
Born: 1937, Died: Feb. 15, 1998



Malcolm E. Gillespie, M.D.
University of Nebraska, 1961
Born: 1927, Died: Aug. 7, 1997



John A. Graf, M.D.
University of Manitoba, 1964
Born: 1942, Died: April 21, 1998



Kermit J. Halverson, M.D.
University of Minnesota, 1955
Born: 1927, Died: June 28, 1998



Lawrence M. Hammar, M.D.
University of Minnesota, 1936
Born: 1909, Died: Feb. 24, 1998



Robert G. Hankerson, M.D.
University of Nebraska, 1932
Born: 1910, Died: Feb. 24, 1998



Frank M. Howard Jr., M.D.
University of Pennsylvania, 1952
Born: 1925, Died: June 5, 1998



Edward G. Hustad, M.D.
Unknown, 1953
Born: 1919, Died: July 7, 1998



William W. Jepson, M.D.
Cornell University, 1950
Born: 1926, Died: June 8, 1998



Henry J. Jeronimus, M.D.
University of Minnesota, 1939
Born: 1913, Died: March 14, 1998



Frank E. Johnson, M.D.
University of Minnesota, 1943
Born: 1917, Died: Oct. 25, 1997



Norman Paul Johnson, M.D.
University of Iowa, 1948
Born: 1924, Died: Aug. 21, 1997



Allen S. Judd, M.D.
University of Minnesota, 1946
Born: 1920, Died: Nov. 12, 1997



Haddow M. Keith, M.D.
University of Toronto, 1924
Born: 1899, Died: Jan. 26, 1998



Harvey A. Knoche, M.D.
University of Minnesota, 1946
Born: 1921, Died: Feb. 1, 1998



Albert E. Krieser, M.D.
Loyola University, 1938
Born: 1913, Died: Aug. 1, 1997



Gerald E. Larson, M.D.
University of Minnesota, 1950
Born: 1924, Died: Aug. 8, 1998



Donald S. Lehman, M.D.
University of Illinois, 1942
Born: 1915, Died: Dec. 8, 1997



George X. Levitt, M.D.
Unknown, 1927
Born: 1902, Died: Aug. 26, 1998



J. Benjamin Lund, M.D.
University of Minnesota, 1943
Born: 1914, Died: Nov. 21, 1997



Robert B. May, M.D.
University of Iowa, 1936
Born: 1911, Died: May 25, 1998



Brian J. McGroarty, M.D.
University of Minnesota, 1940
Born: 1915, Died: May 3, 1998



Gertrude E. Saxman, M.D.
Loma Linda University, 1937
Born: 1910, Died: Nov. 23, 1997



John W. Wahl, M.D.
Tulane University, 1966
Born: 1940, Died: Sept. 1, 1997



Philip A. Olson, M.D.
University of Illinois, 1947
Born: 1923, Died: Jan. 16, 1998



Daniel Alfred Schulte, M.D.
Unknown, 1972
Born: 1947, Died: July 9, 1998



Clyde M. Warner, M.D.
Baylor College, 1955
Born: 1930, Died: Sept. 15, 1997



George Ervin Penn, M.D.
University of Minnesota, 1933
Born: 1906, Died: Feb. 24, 1998



Horace G. Scott, M.D.
University of Minnesota, 1929
Born: 1903, Died: Oct. 4, 1997



Charles H. Watkins, M.D.
University of Minnesota, 1928
Born: 1899, Died: Nov. 9, 1997



Dragojla Pivac, M.D.
Unknown, 1939
Born: 1912, Died: Aug. 12, 1998



Andrew W. Shea, M.D.
University of Minnesota, 1940
Born: 1914, Died: April 15, 1998



Robert R. Wright, M.D.
Northwestern University, 1941
Born: 1914, Died: April 17, 1998



Robert E. Priest, M.D.
University of Minnesota, 1932
Born: 1907, Died: Feb. 2, 1998



John F. Shrouts, M.D.
Northwestern University, 1936
Born: 1908, Died: Feb. 18, 1998



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wanted to join primary care group in NW Minnesota lake community of 7,500. Group of 5 Family Physicians and an Internal Medicine doctor providing obstetric and gynecology care. Group is seeking OB/GYN specialist for general and high risk OB and consultations and also a gynecology practice. 68-bed hospital has newly remodeled Family Birth Center and has about 365 births a year. Fair percent of high risk patients now being sent to tertiary center 45 miles away with a staff of three neonatologists.

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fax 701-234-2316
e-mail Kathetoft@meritcare.com
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A Calendar of Continuing Medical Education Courses

Provided through the MMA Committee on Accreditation and CME. For assistance with scheduling meetings or for information on future medical meetings and CME courses, please contact the MMA office: 3433 Broadway Street NE, Suite 300, Minneapolis, Minnesota 55413-1761; 612/378-1875. For a complete listing of our calendar, visit the MMA home page at www.mnmed.org. Information for each entry is arranged by date; name of program; primary sponsor; location; contact person.

DECEMBER 1998

Dec. 3-4 **Cardiovascular Conference** HealthPartners Institute for Medical Education; Holiday Inn East, St. Paul, MN. CONTACT: Sharon Kopp, Registrar, Regions Hospital, 640 Jackson Street, St. Paul, MN 55101; 651/221-3992.

JANUARY 1999

Jan. 29 **Family Practice Conference** St. Mary's/Duluth Clinic Health System; Duluth Entertainment Convention Center, Duluth, MN. CONTACT: Diane Torvick, 400 East Third Street, Maildrop 5AV2ME, Duluth, MN 55805; 218/727-8159.

Jan. 28-30 **Avoiding the Traps in Ob/Gyn: Third Annual Post Graduate Course** Hennepin County Medical Center; Rancho Bernardo, San Diego, CA. CONTACT: HCMC CME, 701 Park Avenue, Mail Code 861-B, Minneapolis, MN 55415-1829; 612/347-2075 or 800/263-4262.

FEBRUARY 1999

Feb. 1-5 **Continuing Challenges in Hematology, Oncology and Hematopathology** Mayo Medical Laboratories; Beaver Run Resort, Breckenridge, CO. CONTACT: Julie McAdams, 200 First Street SW, Rochester, MN 55905; 507/284-8599.

Feb. 6-13 **HealthEast 1999 Winter Medical Seminar** HealthEast; Cabo San Lucas, Mexico. CONTACT: Annette Anderson, 1700 University Avenue W, St. Paul, MN 55104; 651/232-5104.

Feb. 11-14 **Neurology in Clinical Practice** Mayo Foundation; Rancho Bernardo Inn, San Diego, CA. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Feb. 15-17 **Gynecologic Surgery: Perspectives for the 21st Century** Mayo Foundation; Rancho Bernardo Inn, San Diego, CA. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Feb. 22-26 **Selected Topics in Internal Medicine** Mayo Foundation; Hapuna Beach Prince Hotel, Mauna Kea

Resort, Hapuna Beach, Big Island of Hawaii. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

Feb. 25-27 **Mayo Clinic State-of-the-Art Symposium: Arrhythmia Management** Mayo Foundation; Silverado Resort, Napa Valley, CA. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

MARCH 1999

March 8-12 **Tutorials in Diagnostic Radiology** Mayo Foundation; Keystone Resort, Keystone, CO. CONTACT: Registrars, Mayo Foundation, Section of Continuing Medical Education, 200 First Street SW, Rochester, MN 55905; 800/323-2688.

APRIL 1999

April 16-17 **Osteoporosis: A Clinical Perspective** Hennepin County Medical Center; Sheraton Inn Airport, Bloomington, MN. CONTACT: HCMC CME, 701 Park Avenue, Mail Code 861-B, Minneapolis, MN 55415-1829; 612/347-2075 or 800/263-4262.

CentraCare Clinic is a progressive and growing 97-physician multi-specialty clinic with 8 Central Minnesota sites.

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Long Prairie is 55 miles from the St. Cloud area. City population is 3,000 and the service area reaches over 10,000. The Long Prairie area includes excellent school district, lakes, woods and a diversified industry. Recreational activities include a beautiful golf course, prairie arts center and hockey arena.

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CentraCare Clinic - Long Prairie currently has openings for a family practice physician with a 1 in 4 call schedule.

For further information, please call or write: Toni Tebben
Site Coordinator
24 - 9th Street SE
Long Prairie, MN 56341
320-732-7214

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MAY 1999

May 4-7 **Sixth International Surgical Pathology Symposium** Mayo Medical Laboratories; Hotel Inter-Continental, Prague, Czech Republic. CONTACT: Julie McAdams, 200 First Street SW, Rochester, MN 55905; 507/284-8599.

May 21 **Poisonous Plants Symposium** Hennepin County Medical Center; Pillsbury Auditorium, HCMC, Minneapolis, MN. CONTACT: HCMC CME, 701 Park Avenue, Mail Code 861-B, Minneapolis, MN 55415-1829; 612/347-2075 or 800/263-4262.

ENDURING MATERIALS

Videotapes: **Bloodborne Pathogens, Antibiotic Update and Resistance, TB Update, Flesh-Eating Strep** Allina Health System. CONTACT: Patricia E. Walton, 5601 Smetana Drive, PO Box 9310, Minneapolis, MN 55440-9310; 612/992-2867.

Videotapes: **Antibiotic Resistance/STDs, HIV/Adult Immunizations, Diarrheal Parasitic Diseases/Foodborne Diseases** University of Minnesota. CONTACT: Continuing Medical Education, 615 Washington Avenue SE, Suite 107, Minneapolis, MN 55414; 612/626-7600 or 800/776-8636.

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Alexandria Clinic, P.A.
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Mankato Clinic, Ltd., is seeking additional BC/BE physicians in the following specialties: occupational medicine, dermatology, gastroenterology, pulmonary medicine, radiology, and urgent care. The Mankato Clinic is a 70-physician multispecialty group practice in south-central Minnesota with a trade-area population of 250,000+. Guaranteed salary first year, incentive thereafter with full range of benefits and liberal time off. For more information, call Dr. Bryon C. McGregor, Medical Director, or Roger Greenwald, Executive Vice President, 507/625-1811, or write PO Box 8674, Mankato, MN 56002-8674. (*10/98-R)

MDsearch assists medical groups and hospitals in their recruiting efforts. For confidential information on opportunities in the Upper Midwest, send CV and/or call collect Mary Jo Cordes, MDsearch, PO Box 21507, St. Paul, MN 55121; 612/454-7291. Fax: 612/454-7277. (2/93-R)

Urgent Care Physicians: Independent group seeking part-time/full-time physicians to staff our urgent care facilities in Bloomington, Burnsville, Edina, and Lakeville. Contact the director of support services, 612/985-8931, or send inquiries to Quello Clinic Ltd., 7801 East Bush Lake Road, Suite 300, Bloomington, MN 55439. (*6/98-R)

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Falls Medical Search Seeks Physicians for practice opportunities locally and nationally. To explore new practice options confidentially, send your CV or call Pat Falls, Falls Medical Search, 34 Forest Dale Road, Minneapolis, MN 55410; 612/922-0207 or 800/383-8916. (*5/92-R)

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- Pediatric Intensivist
- Vascular Surgery

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FAMILY PRACTITIONERS

Gundersen Clinic, Ltd., is seeking BC/BE Family Practitioners for a variety of opportunities located in southwestern Wisconsin, northeastern Iowa and southeastern Minnesota to be part of Gundersen's regional rural network, a system staffed primarily with Family Physicians. Gundersen Clinic's regional rural network is supported by both on-site and immediate phone consultative services (Medlink) and from the 300 plus multi-specialty physician group in La Crosse, Wisconsin.

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Neurologist-Minnesota: Progressive and growing 94-physician multispecialty clinic based in St. Cloud, Minnesota, seeks third BC/BE neurologist to share one-in-seven call. Growing central Minnesota community offers an outstanding lifestyle with three colleges, excellent public and private schools, and abundant recreational activities. St. Cloud is located on the Mississippi River and is a one-hour drive to the Twin Cities or premier lake areas. Attractive compensation and benefit package. Interested applicants should send CV to: Mark Murphy, Clinic Administrator, CentraCare Clinic, 1200 6th Avenue North, St. Cloud, MN 56303. Phone 320/240-2151; fax 320/240-2113. 3-1/99

Janesville, Wisconsin: Dean Medical Center, a 395+ physician multispecialty group, is actively recruiting a BE/BC internist for our Riverview Clinic in Janesville, Wisconsin

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Turn the page to JUST WRITE!



Minnesota Medicine's
 column on medical writing
 by James Kaufmann,
 Hennepin Faculty Associates
 communications director

Time and Place

The Writer's Best Friends

James Kaufmann, Ph.D.

Embarking on a writing task? The first thing to do is ask yourself, "Do I really have to write this?" If at all possible, answer this question in the negative. Don't write unless you really, really have to.

Why? Unless you really, really have to write, you'll probably give it less than your best effort. And good writing requires your best effort.

So think about it. Isn't there something better you could be doing with your time? If there is, it will compete effectively against your writing, and you won't be able to muster the commitment you will need to write well. There's already enough bad writing out there embarrassing its authors—why add to it?

Again: Don't write something unless you really, really have to.

WHAT TO DO IF YOU REALLY, REALLY HAVE TO WRITE

Recognize that you're going to need time. Solve the time problem and you'll be on your way to solving subsequent problems, such as identifying your purpose, analyzing your audience, and managing your content.

Sometimes the worst writing results from the simple failure to allow enough time for writing. And when short of time, writers remain hazy about their purpose, misread their audience, and develop no plan to guide their writing. The writing that results is not only unsuccessful (e.g., the grant application draws unfavor-



able reviews), but it's an excruciatingly painful process.

Give yourself a chance. Block out time for writing, and *guard that time*. Don't break your appointment to write by later scheduling something else in its place. Tolerate no interruptions during your writing time. There are times when the world will keep turning if you're unavailable to it for a couple of hours. Find those times.

THE WRITE PLACE

Folk wisdom has it that there's a time and a place for everything. After you've blocked out some time for writing, you need a place that helps you see yourself as a writer; some place that encourages you to believe: "OK, I can write this," or "Now I'm all set to write," or "Yep, I'm a writer."

You may already have a spot that you think of as your writing place. Look at it closely. Does it have everything you need? Of course you'll have paper and writing implements

(I'll discuss computers in a future column), but do you have a selection of papers (legal pads, scratch pads)? A variety of writing tools (pens, pencils, highlighters)? Erasers, scissors, and tape? Books you're likely to consult (dictionary, style guide, medical references)? And perhaps most importantly, is there an uncluttered surface where you can spread things out?

Don't forget your creature comforts. The writing process will be torturous enough; you don't need to add self-deprivation to the challenges you'll face. Some comforts are obvious: A favorite pen, a writing pad in a special color. A favorite (nonalcoholic) beverage, perhaps in a favorite mug. Pleasant music (but not something you like *too much*). Some comforts are less obvious and can be downright idiosyncratic. Do you have a cap or T-shirt that you really love—one that means you must be having fun? What the heck—why not wear it, if it'll help? No one will know.

THE WRITE MOOD

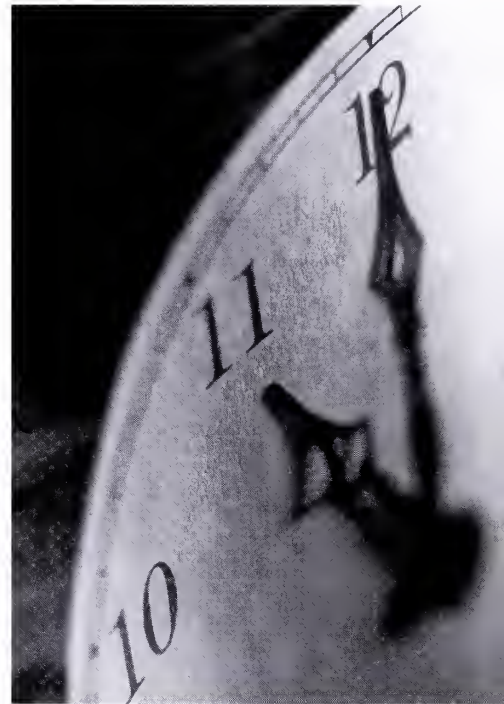
Some people say they can't write unless they're in the mood. Mood is important. But it's not something you wait for. It's something you induce by making a place, and making the time, for writing in your life. **MM**

James Kaufmann is director of the office of communications, Hennepin Faculty Associates, in Minneapolis.
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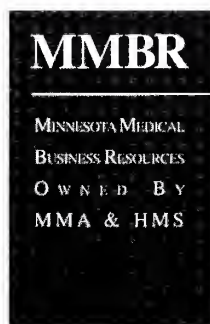
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